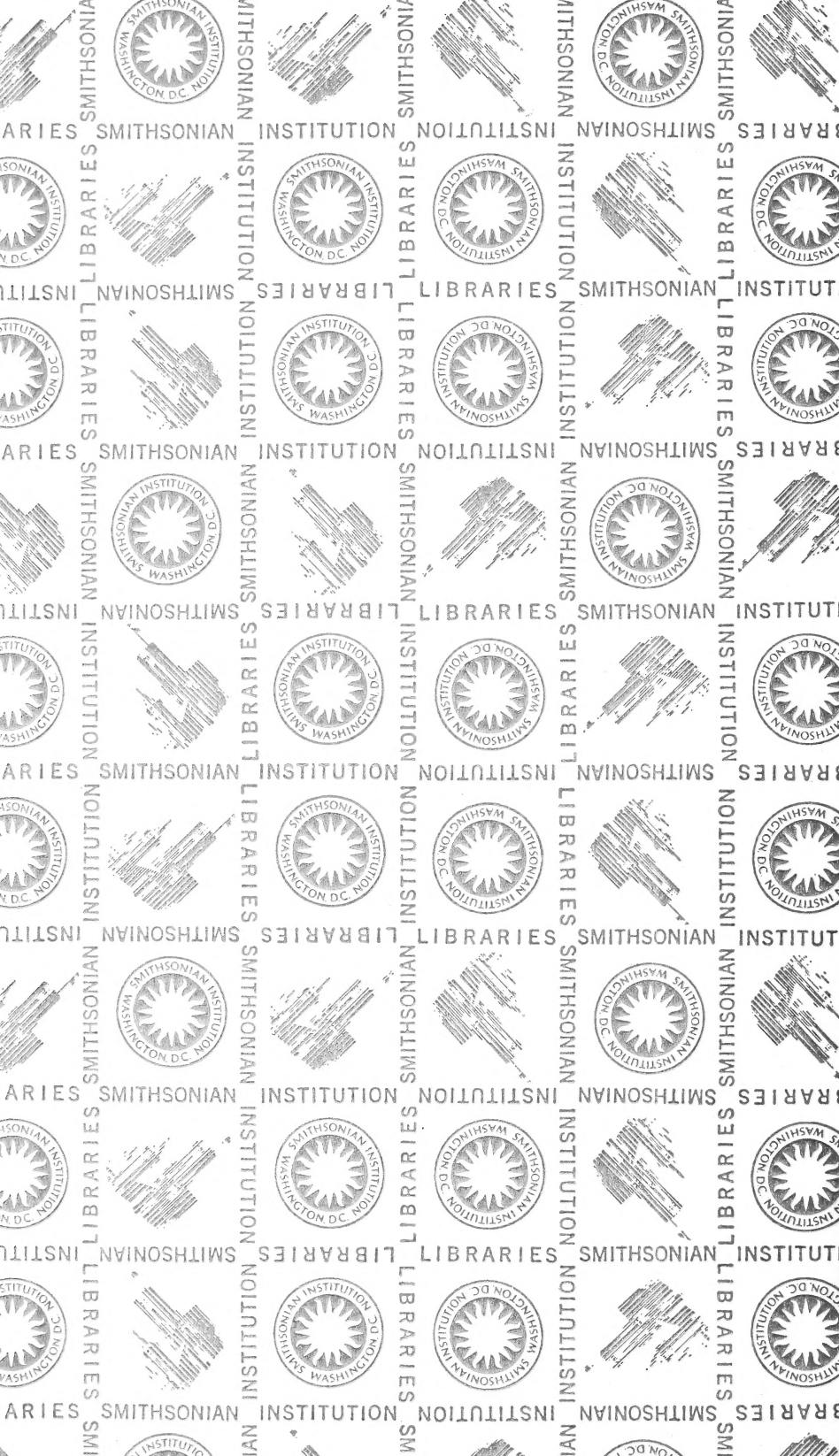
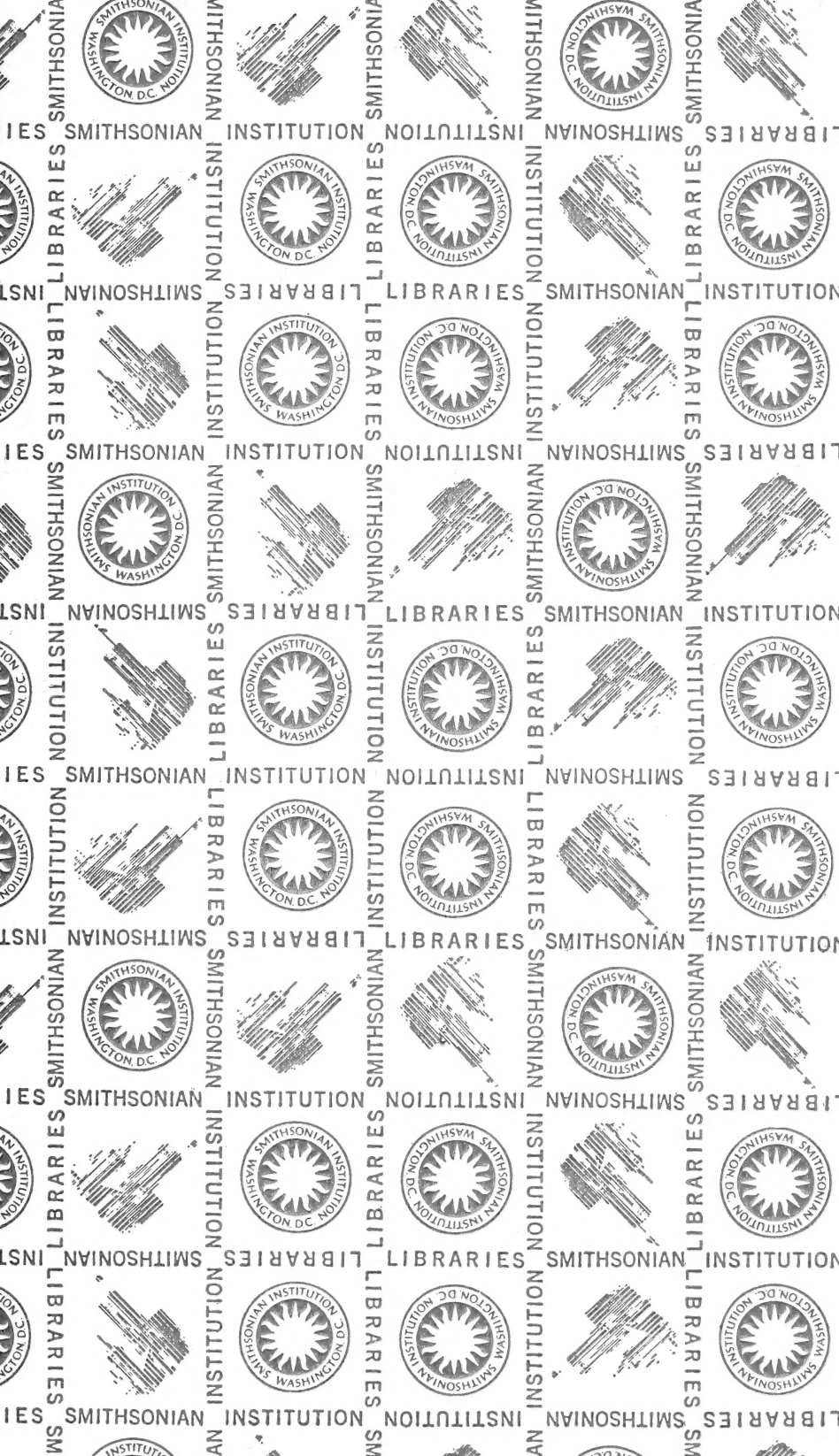


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MAY 1903

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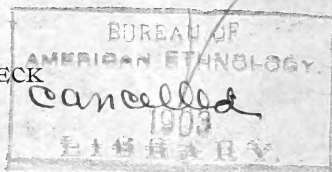
CHARLES H. PECK State Botanist

Bulletin 67

BOTANY 6

REPORT OF THE STATE BOTANIST 1902

BY
CHARLES H. PECK



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ALBANY

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CHARLES H. PECK State Botanist

Bulletin 67

BOTANY 6

REPORT OF THE STATE BOTANIST 1902

To the Regents of the University of the State of New York

I have the honor of submitting to you the report of work done in the botanical department of the State Museum during the past year.

Specimens of plants for the herbarium have been collected in the counties of Albany, Columbia, Essex, Fulton, Hamilton, Herkimer, Oneida, Rensselaer, Saratoga, Suffolk, Washington and Westchester. Specimens have been received from correspondents that were collected in the counties of Albany, Cayuga, Delaware, Erie, Essex, Herkimer, Monroe, New York, Oneida, Onondaga, Ontario, Saratoga, Schenectady, Seneca, Schoharie, St Lawrence, Suffolk, Tioga, Wayne and Westchester.

The specimens collected and contributed represent 289 species, of which 235 belong to the collections of the botanist, 54 to those of correspondents; 59 are new to the herbarium, 230 are now more fully and completely represented than before. Of the 59 species, 17 are considered new species and are herein described as such. Of these, 15 are among the collections of the botanist, two belong to those of correspondents. All of the new species are fungi. The number of species added to the flora of the State is 73, but 14 of these have previously been united with other species either as forms or varieties. They have recently been published as distinct species and are now included in the additions to our flora. A list of the species of which specimens have been added to the herbarium is marked A.

Names of species added to our flora, together with notes concerning their habitats, localities, time of collection of the specimens and descriptions of new species, are contained in a part of the report marked **C**.

The number of persons who have contributed specimens is 52. Their names and their respective contributions are recorded in a part of the report marked **B**. Some of these contributions consist of specimens of extralimital species and are not included in the enumeration just given. Some of the specimens were sent for identification ; but, if for any reason their preservation seemed desirable and they were in sufficiently good condition, they have been preserved and credited to the sender as a contribution. The number of those who have sent specimens for identification is 90. The number of species identified for them is 1054. These are chiefly fungi.

Remarks and results of observations on previously reported species, new stations of rare plants, unusual habitats and descriptions of new varieties are given under **D**.

During summer and early autumn the weather was unusually wet and showery, a condition often supposed to be favorable to mushroom growth. Nevertheless, the result was by no means an abundant crop. Many species which in ordinarily moist seasons grow gregariously or are scattered through fields and woods in abundance were either wholly wanting or were few and far apart. Certain species of *Amanita*, *Lepiota*, *Lactarius* and *Russula*, which are usually common were noticeably scarce or not seen at all. The common mushroom crop was almost a complete failure. The prevailing low temperature combined with an excess of moisture probably prevented the development of the mycelium and caused the absence of many species. But opportunity was afforded for the trial of the edible qualities of several of our wild mushrooms. Of those tested, eight species have been found edible. Colored figures of natural size have been prepared to illustrate these, and descriptions have been written according to the plan followed in similar cases in previous reports. These descriptions constitute a part of the report marked **E**.

The investigation of our *Crataegus* flora, which was begun last year, has been continued. The close resemblance many of our

species of *Crataegus* have to each other and the need of a correct knowledge of all their distinguishing characters in order to identify the species satisfactorily, make it necessary to have specimens showing flowers, mature fruit, immature and mature foliage. Our species blossom in May and early in June, but do not ripen their fruit till late in August, during September and early in October. It is therefore necessary to make at least two collections of samples from each individual tree or shrub to be identified. One taken in flowering time will show the flowers and young leaves, the other taken in fruiting time should show the ripe fruit and mature leaves. It is desirable also to have samples of young and vigorous shoots with their mature leaves, which often differ somewhat from the leaves of ordinary shoots; also of twigs of the first and second year's growth and of the early growth of the season with stipules and thorns. Specimens of all the unrecognized species of *Crataegus* growing in the vicinity of Albany and in the Champlain valley from Fort Ann on the south to Westport on the north and in North Elba have been collected. The localities in the immediate vicinity of Albany have been visited several times; those in the Champlain valley, in North Elba and the country between it and Westport twice; once in May and early June and once in September. A large amount of material has been collected, duplicate specimens having in all cases been taken. By reason of the peculiar difficulties attending the identification of these plants, owing to the confusion of species and the omission in older descriptions of any record of characters now deemed important, it has seemed best to avail myself of the aid of Professor C. S. Sargent, the distinguished dendrologist and specialist in this branch of botany. Accordingly a set of these specimens has been sent to him for identification.

Mr F. E. Fenno, an active botanist of Tioga county, has from time to time contributed to the herbarium specimens of rare and interesting plants from his county. He has given much time to the collection and study of the plants of his region and has recently sent me a very full annotated list of the species known from his own observation to occur there. In all doubtful cases these have been identified by specialists. The *Illustrated Flora*

has chiefly been followed in the arrangement and nomenclature of the list, and the territory covered is described as the Susquehanna valley and adjacent hills of Tioga county. This territory includes the greater part of the southern half of the county. It is apparently rich in species, the list containing a remarkable number for such a limited region. It has therefore seemed to me desirable that this list should be published. It, with the *Flora of the Upper Susquehanna* by W. N. Clute, will give a very fair knowledge of what species of flowering plants and ferns occur in the southern central part of our State and will be an aid in determining the range of little known and rare species. It has therefore been added to this report as appendix F.

Respectfully submitted

CHARLES H. PECK

State Botanist

Albany, Dec. 3, 1902

A

PLANTS ADDED TO THE HERBARIUM

New to the herbarium

- Delphinium ajacis* L.
Lepidium ruderales L.
Hypericum boreale (Britton) Bickn.
Lactuca scariola L.
Hypochaeris radicata L.
Artemisia stelleriana Bess.
Xanthium commune Britton
Aster roscidus Burgess
Matricaria matricarioides (Less.) Porter
Antennaria fallax Greene
A. *ambigens* (Greene) Fern.
A. *brainerdii* Fern.
A. *petaloidea* Fern.
Pottia riparia Aust.
Tortula ruralis Ehrh.
Racomitrium heterostichum Brid.
Encalypta rhabdocarpa Schwaegr.
Hypnum lindbergii Limpt.
Lioclaena lanceolata Nees
Tricholoma radiculatum Pk.
Clitocybe inversa (Scop.) Fr.
Mycena rugosoides Pk.
Hygrophorus subrufescens Pk.
Lactarius luteolus Pk.
Russula magnifica Pk.
R. *earlei* Pk.
Marasmius biformis Pk.
M. *leptopus* Pk.
M. *insititius* Fr.
M. *thujinus* Pk.
Leptonia hortensis Pk.
Flammula pusilla Pk.
Craterellus subundulatus Pk.
Clavaria crassipes Pk.
Secotium warnei Pk.
Licea variabilis Schrad.
Aecidium ligustri Strauss
Cintractia affinis Pk.
Phyllosticta grisea Pk.
Gloeosporium phaeosorum Sacc.
Sporotrichum poae Pk.
Penicillium digitatum (Fr.) Sacc.
P. *pallidofulvum* Pk.
Macrosporium lagenariae Thum.
Fusarium laxum Pk.
Stilbum resinariae Pk.
Helvella ambigua Karst.
Detonia fulgens (Pers.) Rehm
Geopyxis carbonaria A. & S.
Calloria caulophylli (E. & E.) Rehm
Lachnum inquilinum (Karst.) Schroet.
Sclerotinia smilacinae Durand
Ciboria americana Durand
C. *sulphurella* (E. & E.) Rehm
Caldesia sabiniae (Dellot) Rehm
Peziza violacea Pers.
Helotium scut. vitellinum Rehm
Ascobolus atrofuscus Ph. & Pl.
Melanospora vervecina (Desm.) Fckl.

Not new to the herbarium

- Actaea rubra* L.
Agrimonia striata Mx.
Agrostis stolonifera L.
Amorpha fruticosa L.
Amelanchier canadensis (L.) Med.
Anthemis cotula L.
Antennaria canadensis Greene
A. *neglecta* Greene
A. *plantaginea* R. Br.
A. *neodioica* Greene
Arenaria groenlandica (Retz.) Spreng.
Arisaema pusillum (Pk.) Nash
Asclepias exaltata Muhl.
Aster concinnus Willd.
A. *schreberi* Nees
Brassica rapa L.
B. *arvensis* (L.) B. S. P.
Blephilia hirsuta (Pursh) Torr.
B. *ciliata* (L.) Raf.
Calamagrostis inexpansa Gray
Campanula rotundifolia L.
Cassia nictitans L.
Chelidonium majus L.
Chrysopsis graminifolia (Mx.) Nutt.
Chrysanthemum leucanthemum L.
Convolvulus arvensis L.

- Convolvulus spithameus L.*
Cypripedium hirsutum Mill.
Dianthus armeria L.
Drosera rotundifolia L.
Erigeron ramosus (Walt.) B. S. P.
E. philadelphicus L.
Eriophorum polystachyon L.
Eupatorium maculatum L.
Fraxinus americana L.
Galium concinnum T. & G.
Gentiana andrewsii Griseb.
Geranium maculatum L.
G. carolinianum L.
Habenaria clavellata (Mx.)
Hamamelis virginiana L.
Helianthus giganteus L.
Houstonia longifolia Gaert.
Hypericum mutilum L.
Kneiffia pumila (L.) Spach
Lactuca sagittifolia Ell.
Lobelia cardinalis L.
Lepidium virginicum L.
L. apetalum Willd.
Lilium canadense L.
Linaria canadensis (L.) Dum.
Lycopus communis Bickn.
Malus malus (L.) Britton
Malva rotundifolia L.
Medicago sativa L.
Myriophyllum humile Raf.
Onagra oakesiana (Gray) Britton
Origanum vulgare L.
Panax trifolium L.
Panicum lanuginosum Ell.
Polymnia can. radiata Gray
Physalis het. ambigua (Gray) Rydb.
Polygonum convolvulus L.
P. hartwrightii Gray
Potentilla anserina L.
P. canadensis L.
P. pumila Poir.
Quercus alexanderi Britton
Ranunculus abortivus L.
Raphanus raphanistrum L.
Ribes rubrum L.
Rhynchospora macrostachya Torr.
Rubus hispidus L.
R. procumbens Muhl.
R. occid. pallidus Bail.
Sporobolus longifolius (Torr.) Wood
Sporobolus neglectus Nash
Salix balsamifera (Hook.) Barratt
Salsola tragus L.
Sanicula gregaria Bickn.
Saxifraga virginienensis Mx.
Sibbaldiopsis tridentata (Soland.) Rydb.
Taraxacum taraxacum (L.) Karst.
T. erythrospermum Andrz.
Tetragonanthus deflexus (Sm.) Kuntze
Viola palmata L.
V. pap. domestica (Bickn.) Poll.
V. arenaria DC.
V. rostrata Pursh
Woodsia ilvensis (L.) R. Br.
Xanthium canadense Mill.
X. echinatum Murr.
Xyris caroliniana Walt.
Polypodium vulgare L.
Dicranum schraderi W. & M.
Hypnum oakesii Sulliv.
H. pratense Koch
H. deplanatum Schp.
Brachythecium starkii Brid.
B. salebrosum (Hoffm.)
Porella platyphylla Lindb.
Anthoceros laevis L.
Amanita flavoconia Atk.
A. caesarea Scop.
A. onusta Howe
Amanitopsis strangulata Fr.
A. volvata (Pk.) Sacc.
A. farinosa (Schw.)
Armillaria mellea Vahl
Tricholoma vaccinum (Pers.) Fr.
T. imbricatum Fr.
T. equestre L.
T. subacutum Pk.
T. silvaticum Pk.
Clitocybe dealbata Sow.
C. tortilis (Bolt.) Fr.
C. amethystina (Bolt.) Fr.
Collybia platyphylla Fr.
C. familia Pk.
C. uniformis Pk.
C. acervata Fr.
Mycena subincarnata Pk.
M. clavicularis Fr.
M. pterigena Fr.
Omphalia campanella (Batsch) Fr.
O. umbellifera L.

- Hygrophorus pudorinus *Fr.*
 H. splendens *Pk.*
 H. capreolarius *Kalchb.*
 H. pratensis (*Pers.*) *Fr.*
 H. nitidus *B. & C.*
 H. peckii *Atk.*
 Lactarius volemus *Fr.*
 L. subdulcis *Fr.*
 L. cinereus *Pk.*
 L. griseus *Pk.*
 L. parvus *Pk.*
 Russula foetens (*Pers.*) *Fr.*
 R. granulata *Pk.*
 R. crustosa *Pk.*
 R. variata *Banning*
 R. olivascens *Fr.*
 R. rugulosa *Pk.*
 R. simillima *Pk.*
 Cantharellus cibarius *Fr.*
 C. minor *Pk.*
 C. cinnabarinus *Schw.*
 C. cinereus *Fr.*
 C. infundibuliformis (*Scop.*)
 Marasmius subnudus *Pk.*
 M. polyphyllus *Pk.*
 M. filipes *Pk.*
 Lenzites sepiaria *Fr.*
 Pholiota vermiflua *Pk.*
 P. togularis (*Bull.*) *Fr.*
 P. squarrosoides *Pk.*
 P. confragosa *Fr.*
 Cortinarius rimosus *Pk.*
 C. berlesianus *S. & C.*
 Inocybe geophylla *Sow.*
 Stropharia depilata (*Pers.*) *Fr.*
 S. johnsoniana *Pk.*
 Hypholoma subaquilum *Banning*
 Coprinus micaceus *Fr.*
 Boletus auriporus *Pk.*
 B. clintonianus *Pk.*
 Polyporus sulphureus (*Bull.*) *Fr.*
 P. resinosus (*Schrad.*) *Fr.*
 P. benzoinus (*Wahl.*) *Fr.*
 P. caesius (*Schrad.*) *Fr.*
 Trametes variiformis *Pk.*
 T. serialis *Fr.*
 Fomes pinicola *Fr.*
 F. fomentarius (*L.*) *Fr.*
 F. roseus *A. & S.*
 Polystictus abietinus *Fr.*
 Daedalea quercina (*L.*) *Pers.*
 D. unicolor (*Bull.*) *Fr.*
 Merulius tenuis *Pk.*
 M. fugax *Fr.*
 M. niveus *Fr.*
 Phlebia radiata *Fr.*
 Hydnum imbricatum *L.*
 H. repandum *L.*
 H. albidum *Pk.*
 H. caput-ursi *Fr.*
 Radulum orbiculare *Fr.*
 Odontia lateritia *B. & C.*
 Tremellodon gelatinosum (*Scop.*) *Pers.*
 Craterellus cornucopioides (*L.*) *Pers.*
 Clavaria botrytis *Pers.*
 C. cristata *Pers.*
 C. stricta *Pers.*
 C. muscoides *L.*
 C. ligula *Fr.*
 C. argillacea *Fr.*
 C. tsugina *Pk.*
 Calocera cornea *Fr.*
 Lycoperdon gemmatum *Batsch*
 L. subincarnatum *Pk.*
 Granularia pulvinata (*Schw.*) *White*
 Didymium melanospermum (*Pers.*)
Mach.
 Leocarpus fragilis (*Dicks.*) *R.*
 Trichia favoginea (*Batsch*) *Pers.*
 Hemitrichia clavata (*Pers.*) *R.*
 Ustilago zeae (*Beckm.*) *Ung.*
 Puccinia podophylli *Schw.*
 Urocystis anemones (*Pers.*)
 Gymnosporangium clavipes *C. & P.*
 Septoria ludwigiae *Cke.*
 Glomerularia corni *Pk.*
 Botrytis vulgaris *Fr.*
 Helvella macropus (*Pers.*) *Karst.*
 Geoglossum ophioglossoides (*L.*) *Sacc.*
 Mitrula vit. irregularis (*Pk.*) *Sacc.*
 Leotia lubrica (*Scop.*) *Pers.*
 Cudonia circinans (*Pers.*) *Fr.*
 C. lutea (*Pk.*) *Sacc.*
 Dasyscypha agassizii (*B. & C.*) *Sacc.*
 Lachnea scutellata (*L.*) *Sow.*
 L. scubalonta *C. & G.*
 Sarcoscypha floccosa *Schw.*
 Pezicula carpinea (*Pers.*) *Tul.*

Pezizula acericola Pk.
Exoascus confusus Atk.
Sphaerotheca humuli (DC.) Burr.

Hypomyces lactifluorum Schw.
Xylaria digitata (L.) Grev.
Colpoma morbidum (Pk.) Sacc.

B

CONTRIBUTORS AND THEIR CONTRIBUTIONS

Mrs A. M. Smith and Mrs C. W. Harris, Brooklyn

Amblystegium fluitans De N.
 A. *riparium* B. & S.
Amphoridium lapponicum Schp.
Anomodon apiculatus B. & S.
 A. *attenuatus* Huebn.
 A. *obtusifolius* B. & S.
 A. *rostratus* Schp.
Aulacomnion palustre Schwaegr.
Barbula caespitosa Schwaegr.
 B. *convoluta* Hedw.
Bartramia oederiana Swartz
 B. *pomiformis* Hedw.
Brachythecium acuminatum Bv.
 B. *laetum* Brid.
 B. *populeum* B. & S.
 B. *rivulare* B. & S.
 B. *salebrosum* B. & S.
 B. *starkii* Brid.
 B. *velutinum* B. & S.
Bryum himum Schreb.
 B. *caespiticium* L.
 B. *capillare* L.
 B. *nutans* Schreb.
 B. *roseum* L.
 B. *torquescens* B. & S.
Buxbaumia aphylla L.
Catherinea undulata Bv.
Ceratodon purpureus Brid.
Climacium dendroides W. & M.
Cylindrothecium cladorrhizans Schp.
Dicranum flagellare Hedw.
 D. *montanum* Hedw.
 D. *longifolium* Hedw.
 D. *schraderi* W. & M.
 D. *viride* Schp.
 D. *drummondii* Muell.
Diphyscium foliosum Mohr.
Encalypta rhabdocarpa Schwaegr.
 E. *streptocarpa* Hedw.
Fissidens adiantoides Hedw.
Fontinalis biformis Sulliv.
 F. *lescurii* Sulliv.

Funaria hygrometrica Sibth.
Georgia pellucida Rabenh.
Grimmia apocarpa Hedw.
 G. *leucophaea* Grev.
Gymnostomum rupestre Schwaegr.
Hedwigia ciliata Ehrh.
Hylocomium brevirostre B. & S.
 H. *squarrosus* B. & S.
 H. *triquetrum* B. & S.
Homalia jamesii B. & S.
 H. *trichomanoides* B. & S.
Hypnum chrysophyllum Brid.
 H. *cordifolium* Hedw.
 H. *cuspidatum* L.
 H. *deplanatum* Schp.
 H. *fertile* Sendt.
 H. *haldanianum* Grev.
 H. *hispidulum* Brid.
 H. *imponens* Hedw.
 H. *lindbergii* Limpt.
 H. *recurvans* Schwaegr.
 H. *rusciforme* B. & S.
 H. *schreberi* Willd.
 H. *serrulatum* Hedw.
 H. *splendens* Hedw.
 H. *stellatum* Schreb.
 H. *strigosum* Hoffm.
 H. *uncinatum* Hedw.
Leptobryum pyriforme Schp.
Leucobryum glaucum Schp.
Leucodon julaceus Sulliv.
Myurella careyana Sulliv.
Mnium affine Bland.
 M. *cuspidatum* Hedw.
 M. *drummondii* B. & S.
 M. *medium* B. & S.
 M. *orthorrhynchum* B. & S.
 M. *punctatum* Hedw.
 M. *rostratum* Schp.
 M. *serratum* Brid.
 M. *spinulosum* B. & S.
 M. *stellare* Hedw.

Neckera oligocarpa B. & S.
N. pennata Hedw.
Oncophorus wahlenbergii Brid.
Orthotrichum fallax Schp.
O. anomalum Hedw.
Porotrichum alleghaniense Grout
Philonotis fontana Brid.
P. muhlenbergii Brid.
Pottia riparia Aust.
Plagiothecium denticulatum B. & S.
P. elegans Schp.
P. pulchellum B. & S.
P. striatellum Lindb.
Pogonatum alpinum Roehl.
P. tenue E. G. Britton
Racomitrium heterostichum Brid.
R. microcarpum Brid.
Rhabdoweisia denticulata B. & S.
Seligeria doniana C. Muell.
Sphagnum acutifolium Ehrh.
S. cuspidatum Ehrh.
S. quinquefarium Warnst.
S. squarrosum Pers.

Tortula caespitosa H. & G.
T. tortuosa Ehrh.
Thuidium delicatulum Mitt.
T. recognitum Lindb.
T. paludosum R. & H.
Anthoceros laevis L.
Asterella hemisphaerica Bv.
Bazzania trilobata S. F. Gray
Blepharistoma trichophylla Dumort.
Cephalozia curvifolia Dumort.
C. multiflora Spruce
Conocephalus conicus Dumort.
Frullania asagrayana Mont.
Geocalyx graveolens Nees
Jungermannia barbata Schreb.
Kantia trichomanis S. F. Gray
Lioclaena lanceolata Nees
Lejeunea serpyllifolia Libert
Porella platyphylla Lindb.
Ptilidium ciliare Nees
Scapania nemorosa Dumort.
Trichocolea tomentella Dumort.

Mrs E. G. Britton, New York

Dicranella heteromalla Schp.
Dicranum longifolium Hedw.
D. fuscescens Turn.
Dicranodontium longirostre B. & S.
Weissia ulophylla Ehrh.
W. americana Lindb.
Didymodon cylindricarpus B. & S.
Georgia pellucida Rabenh.
Tortula ruralis Ehrh.
Mnium affine Bland.
M. spinulosum B. & S.
Ulota crispa Brid.
Aulacomnion heterostichum B. & S.
Polytrichum juniperinum Willd.
Fontinalis dalecarlica B. & S.
Anomodon rostratus Schp.
A. viticulosus H. & T.
Webera prolifera (Lindb.)

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R. laxepatulum L. & J.
Plagiothecium denticulatum B. & S.
P. mullerianum Schp.
P. striatellum Lindb.
Hypnum fertile Sendt.
H. splendens Hedw.
H. umbratum Ehrh.
H. oakesii Sulliv.
H. crista-castrensis L.
H. pratense Koch
Pogonatum alpinum Roehl
Typhula muscicola Fr.

Miss H. C. Anderson, Lambertville N. J.

Agaricus abruptus Pk.
Armillaria mellea Vahl
Cantharellus cibarius Fr.

Hydnum cyaneotinctum Pk.
Panus strigosus B. & C.
Strobilomyces strobilaceus (Scop.)

Miss M. L. Overacker, Syracuse

Hepatica acuta (Pursh) Britton
Viola selkirkii Pursh
V. renifolia Gray
Claytonia virginica L.
C. caroliniana Mx.
Asclepias exaltata Muhl.

Ribes prostratum L'Her.
R. lacustre Poir.
Tiarella cordifolia L.
Trillium grandiflorum (Mx.) Salisb.
Polymnia can. radiata Gray
Lycoperdon gemmatum Batsch

Miss V. S. White, New York

Tricholoma fallax Pk.
Clitocybe marginata Pk.
Russula adusta Fr.
R. sordida Pk.
R. basifurcata Pk.
R. purpurina Q. & S.
R. fingibilis Britz.
Marasmius viticola B. & C.

Leptonia serrulata (Pers.) Fr.
Flammula granulosa Pk.
Galera lateritia Fr.
Boletus scabripes Pk.
B. purp. fumosus Pk.
Polyporus confluens (A. & S.) Fr.
P. carpineus Sow.

Miss Emma S. Thomas, Schoharie

Daedalea unicolor Fr.
Taraxacum taraxacum (L.) Karst.

Calvatia maxima (Schaeff.) Morg.

Miss Flora Zinsmeister, Syracuse

Geaster triplex Jungh.

Mrs A. C. Shanks, Round Lake

Polypodium vulgare L.

Mrs P. B. Brandreth, Ossining

Polyporus umbellatus Fr.

Mrs E. C. Anthony, Gouverneur

Secotium warnei Pk.

Cystopus tragopogonis (Pers.) Schroet

Miss Edith Wilkinson, Tannersville

Pluteus cervinus albipes Pk.

F. E. Fenno, Nichols

Crataegus tomentosa L.
Potentilla pumila Poir.
Taraxacum erythrospermum Andrz.
Ilysanthus gratioides (L.) Benth.
Blephilia hirsuta (Pursh) Torr.

Polygonum hartwrightii Gray
Salsola tragus L.
Juncus pelocarpus E. Meyer
Agrostis stolonifera L.
Panicum lanuginosum Ell.

F. S. Earle, New York

Amanitopsis volvata (Pk.) Sacc.
Clitocybe tort. gracilis Pk.
Russula earlei Pk.

Hypholoma incertum Pk.
Stropharia sicc. radicata Pk.

G. F. Atkinson, Ithaca

<i>Tricholoma acre</i> <i>Pk.</i>	<i>Clavaria muscoides</i> <i>L.</i>
<i>Hygrophorus peckii</i> <i>Atk.</i>	<i>C. pinophila</i> <i>Pk.</i>
<i>Merulius tenuis</i> <i>Pk.</i>	<i>Helvella ambigua</i> <i>Karst.</i>
<i>Cudonia circinans</i> (<i>Pers.</i>) <i>Fr.</i>	<i>H. elastica</i> <i>Bull.</i>

S. Sherwood, Delhi

Agaricus placomyces *Pk.*

D. Griffiths, Takoma Park, D. C.

Ustilago aristidae *Pk.*

H. C. Magnus, Albany

Penicillium digitatum (*Fr.*) *Sacc.*

B. L. Robinson, Cambridge, Mass.

<i>Acalypha gracilescens</i> <i>Gray</i>	<i>Carex arctata</i> <i>Boott</i>
<i>Acer rubrum</i> <i>L.</i>	<i>C. backii</i> <i>Boott</i>
<i>Amianthum muscaetoxicum</i> <i>Gray</i>	<i>C. capillaris</i> <i>L.</i>
<i>Antennaria brainerdii</i> <i>Fern.</i>	<i>C. castanea</i> <i>Wahl.</i>
<i>A. canadensis</i> <i>Greene</i>	<i>C. cephalophora</i> <i>Muhl.</i>
<i>A. fallax</i> <i>Greene</i>	<i>C. chordorrhiza</i> <i>Ehrh.</i>
<i>A. neglecta</i> <i>Greene</i>	<i>C. crawfordii</i> <i>Fern.</i>
<i>A. neodioica</i> <i>Greene</i>	<i>C. cristata</i> <i>Schw.</i>
<i>A. parlinii</i> <i>Fern.</i>	<i>C. deflexa</i> <i>Hornem.</i>
<i>A. parl. arnoglossa</i> <i>Fern.</i>	<i>C. eburnea</i> <i>Boott</i>
<i>A. petaloidea</i> <i>Fern.</i>	<i>C. exilis</i> <i>Dew.</i>
<i>A. plantaginea</i> <i>R. Br.</i>	<i>C. fernaldii</i> <i>Bail.</i>
<i>A. rupicola</i> <i>Fern.</i>	<i>C. fusca</i> <i>All.</i>
<i>Anthoxanthum odoratum</i> <i>L.</i>	<i>C. gynocrates</i> <i>Wormsk.</i>
<i>Arenaria serpyllifolia</i> <i>L.</i>	<i>C. interior</i> <i>Bail.</i>
<i>Aristida dichotoma</i> <i>Mx.</i>	<i>C. intumescens</i> <i>Rudge</i>
<i>Aspidium crist. x marginale</i> <i>Daven.</i>	<i>C. laxiflora</i> <i>Lam.</i>
<i>Asplenium viride</i> <i>Huds.</i>	<i>C. lenticularis</i> <i>Mx.</i>
<i>Aster divaricatus</i> <i>L.</i>	<i>C. livida</i> <i>Willd.</i>
<i>A. glomeratus</i> <i>Bernh.</i>	<i>C. longirostris</i> <i>Torr.</i>
<i>A. herveyi</i> <i>Gray</i>	<i>C. lurida</i> <i>Wahl.</i>
<i>A. junceus</i> <i>Ait.</i>	<i>C. oligosperma</i> <i>Mx.</i>
<i>A. linariifolius</i> <i>L.</i>	<i>C. pedunculata</i> <i>Muhl.</i>
<i>A. long. villicaulis</i> <i>Gray</i>	<i>C. pilulifera</i> <i>L.</i>
<i>A. polyphyllus</i> <i>Willd.</i>	<i>C. prasina</i> <i>Wahl.</i>
<i>A. schreberi</i> <i>Nees</i>	<i>C. pubescens</i> <i>Muhl.</i>
<i>A. subulatus</i> <i>Mx.</i>	<i>C. seorsa</i> <i>Howe</i>
<i>A. lind. comatus</i> <i>Fern.</i>	<i>C. stipata</i> <i>Muhl.</i>
<i>Atriplex arenaria</i> <i>Nutt.</i>	<i>C. tenella</i> <i>Schk.</i>
<i>Bidens bipinnata</i> <i>L.</i>	<i>C. teret. ramosa</i> <i>Boott</i>
<i>B. discoidea</i> <i>Britton</i>	<i>C. tetan. woodii</i> <i>Bail.</i>
<i>B. trichosperma</i> <i>Britton</i>	<i>C. tener. richii</i> <i>Fern.</i>
<i>Botrychium matricariaefolium</i> <i>Braun</i>	<i>C. umbel. tonsa</i> <i>Fern.</i>
<i>B. virginianum</i> <i>Sw.</i>	<i>C. umbel. brevirostris</i> <i>Boott</i>
<i>Carex albicans</i> <i>Willd.</i>	<i>C. vaginata</i> <i>Tausch</i>

- Carex varia* Muhl.
C. vesicaria L.
Campanula americana L.
Chrysopsis falcata Ell.
Clitoria mariana L.
Crataegus punctata Jacq.
Cyperus nuttallii Torr.
C. diandrus Torr.
Discopleura capillacea DC.
Dirca palustris L.
Desmodium acuminatum DC.
Elatine americana Arn.
Eleocharis ovata R. Br.
E. intermedia Schultes
E. palustris R. Br.
Elymus striatus Willd.
E. virginianus L.
Epilobium hornemanni Reich.
Eriocaulon decangulare L.
Eriophorum alpinum L.
Equisetum variegatum Schleich.
Eupatorium hyssopifolium L.
Euphorbia polygonifolia L.
Euphrasia amer. canadensis Robins.
E. oakesii Wett.
E. williamsii Robins.
Frimbristylis capillaris Gray
Festuca elatior L.
F. nutans Willd.
Galium latifolium Mx.
Geum ciliatum Pursh
Gerardia skinneriana Wood
Gratiola aurea Muhl.
Hemicarpha subsquarrosa Nees
Heuchera villosa Mx.
Halenia deflexa Griseb.
Hypericum nudicaule Walt.
Iris virginica L.
Juncus brachycephalus Buch.
J. dudleyi Wieg.
J. nodosus L.
J. ten. williamsii Fern.
J. subtilis Meyer
Krigia virginica Willd.
Lobelia kalmii L.
Luzula vernalis DC.
Lycopodium clav. monostachyon G. & H.
L. obscurum L.
L. sabinaefolium Willd.
Lycopodium sitchense Rup.
L. tristachyum Pursh
Lycopus sessilifolius Gray
Lespedeza capitata Mx.
Muhlenbergia willdenovii Trin.
Oryzopsis asperifolia Mx.
Panicum pauciflorum Gray
Paronychia argyrocoma Nutt.
Pedicularis furbishiae Wats.
Pentstemon pubescens Soland.
Pinus contorta Dougl.
Pluchea camphorata DC.
Podostemon ceratophyllus Mx.
Polygola nuttallii T. & G.
Poa compressa L.
P. pratensis L.
P. serotina Ehrh.
Polygonum acre H. B. K.
P. maritimum L.
P. ram. atlanticum Robins.
P. viviparum L.
Polygonella articulata Meisn.
Potamogeton het. graminifolius W. & C.
P. lucens L.
P. pectinatus L.
P. robbinsii Oakes
P. vaseyi Robbins
P. zosteræfolius Schum.
Potentilla canadensis L.
P. norvegica L.
Pyrus arbutifolia L.
Quercus prinoides Willd.
Q. ilicifolia Wang.
Ranunculus fascicularis Muhl.
R. repens L.
R. septentrionalis Poir.
Rhynchospora capillacea DC.
Rosa nitida Willd.
Rotala ramosior Koehne
Rubus arg. randii Bail.
Ruppia maritima L.
Sabbatia stellaris Pursh
Salicorne mucronata Bigel.
Salix balsamifera Barratt
Salsola kali L.
Sanguisorba canadensis L.
Saxifraga leucanthemifolia Mx.
S. virginicensis Mx.
Senecio obovatus Muhl.
Scirpus atrocinctus Fern.

<i>Scirpus caespitosus</i> L.	<i>Spartina juncea</i> Willd.
S. deb. <i>williamsii</i> Fern.	<i>Sporobolus aspericaulis</i> Scrib.
S. pauciflorus <i>Light.</i>	<i>Trifolium hybridum</i> L.
S. peckii <i>Britton</i>	<i>Vaccinium corymbosum</i> L.
<i>Sibbaldia procumbens</i> L.	<i>Veronica serp. borealis</i> Laest.
<i>Silene antirrhina</i> L.	<i>Vicia sativa</i> L.
<i>Solidago humilis</i> Pursh	<i>Viola arenaria</i> DC.

Ralph E. Matteson, Grand Rapids Mich.

<i>Polyporus obtusus</i> Berk.	<i>Irpex crassus</i> B. & C.
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N. L. Britton, New York*Rhexia aristosa* Britton**C. E. Clark, Newark***Clitocybe dealbata deformata* Pk.**J. M. Clarke, Albany***Clitocybe illudens* Schw.**F. S. Boughton, Pittsford***Polyporus squamosus* (Huds.) Fr.**W. R. Griffiths, Douglaston**

<i>Eucalyptus calophylla</i> R. Br.	<i>Arbutus menziesii</i> Pursh
<i>Schinus molle</i> L.	

F. J. Braendle, Washington D. C.

<i>Clitocybe morbifera</i> Pk.	<i>Stropharia siccipes</i> Karst.
<i>Tylostoma punctatum</i> Pk.	<i>Panaeolus epimyces</i> Pk.

A. M. Baker, Coeymans*Pholiota vermiflua* Pk.**N. M. Glatfelter, St Louis Mo.**

<i>Bolbitius glatfelteri</i> Pk.	<i>Polyporus giganteus</i> (Pers.) Fr
<i>Gyromitra brunnea</i> Underw.	

C. J. Elting, Highland

<i>Arisaema pusillum</i> (Pk.) Nash	<i>Hypholoma incertum</i> Pk.
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E. J. Durand, Ithaca

<i>Geopyxis carbonaria</i> A. & S.	<i>Sclerotinia smilacinae</i> Durand
<i>Peziza violacea</i> Pers.	<i>Ciboria sulphurella</i> (E. & E.) Rehm
P. fusicarpa Ger.	C. americana Durand
<i>Detonia fulgens</i> (Pers.) Rehm	<i>Ascobolus atrofuscus</i> P. & P.
<i>Calloria caulophylli</i> (E. & E.) Rehm	<i>Caldesia sabiniae</i> (Dell.) Rehm
<i>Lachnum aquilinum</i> (Karst.) Schroet.	

J. E. S. Heath, Waterloo Ia.

<i>Scleroderma vulgare</i> Fr.	<i>Geaster mammosus</i> Cher.
<i>Calvatia craniiformis</i> (Schw.) Morg.	

D. R. Sumstine, Kittanning Pa.

Lactarius sumstinei *Pk.*
Boletus parasiticus *Bull.*

Russula earlei *Pk.*

W. P. Judson, Albany

Lilium canadense *L.*

C. S. Sargent, Jamaica Plain Mass.

Populus nigra elegans *Bail.*

A. R. Sweetzer, Eugene Ore.

Sparassis herbstii *Pk.*

P. M. Van Epps, Glenville

Chlorosplenium aeruginosum (*Oeder*) *DeN.*

M. S. Baxter, Rochester

Buxbaumia indusiata *Brid.*

H. P. Burt, New Bedford Mass.

Agaricus placomyces *Pk.*

E. M. Freeman, Minneapolis Minn.

Entoloma graveolens *Pk.*

Polyporus obtusus *Berk.*

J. C. Arthur, Lafayette Ind.

Aecidium euphorbiae *Schw.*

Puccinia xanthii *Schw.*

R. B. Mackintosh, Peabody Mass.

Lepiota rhacodes *Vitt.*

Lepiota cristata *A. & S.*

Agaricus pusillus *Pk.*

B. C. Williams, Newark

Clitocybe multiceps *Pk.*

Clitocybe dealb. deformata *Pk.*

F. C. Stewart, Geneva

Gloeosporium phaeosorum *Sacc.*

Sporotrichum poae *Pk.*

A. P. Saunders, Clinton

Morchella angusticeps gracilis *Pk.*

S. E. Jelliffe, New York

Thamnidium elegans *Lk.*

E. B. Sterling, Trenton N. J.

Agaricus tabularis *Pk.*

Phallus imperialis *Schulz.*

A. *haemorrhoidarius* *Schulz.*

Secotium warnei *Pk.*

Coprinus comatus *Fr.*

Catastoma circumscissum *B. & C.*

C. *atramentarius* *Bull.*

Calvatia pachyderma *Pk.*

Charles McIlvaine, Cambridge Md.

Merulius lacrymans (*Jacq.*) *Fr.*

G. B. Fessenden, Boston Mass.

Cortinarius intrusus *Pk.*

G. B. Morris, Waltham Mass.

<i>Cortinarius squamulosus</i> <i>Pk.</i>	<i>Coprinus silvaticus</i> <i>Pk.</i>
<i>Boletus spectabilis</i> <i>Pk.</i>	<i>Boletinus paluster</i> <i>Pk.</i>

J. G. Jack, Jamaica Plain Mass.

<i>Crataegus acutiloba</i> <i>Sarg.</i>	<i>Crataegus laurentiana</i> <i>Sarg.</i>
<i>C. anomala</i> <i>Sarg.</i>	<i>C. lucorum</i> <i>Sarg.</i>
<i>C. coccineoides</i> <i>Ashe</i>	<i>C. macracantha</i> <i>Lodd.</i>
<i>C. collina</i> <i>Chapm.</i>	<i>C. mollis</i> (<i>T. & G.</i>) <i>Scheele</i>
<i>C. canadensis</i> <i>Sarg.</i>	<i>C. peoriensis</i> <i>Sarg.</i>
<i>C. champlainensis</i> <i>Sarg.</i>	<i>C. pedicellata</i> <i>Sarg.</i>
<i>C. densiflora</i> <i>Sarg.</i>	<i>C. pastorum</i> <i>Sarg.</i>
<i>C. dilatata</i> <i>Sarg.</i>	<i>C. praecox</i> <i>Sarg.</i>
<i>C. ellwangeriana</i> <i>Sarg.</i>	<i>C. pruinosa</i> <i>Wend.</i>
<i>C. fecunda</i> <i>Sarg.</i>	<i>C. rotundifolia</i> (<i>Ehrh.</i>)
<i>C. flabellata</i> (<i>Spach</i>) <i>Rydb.</i>	<i>C. scabrida</i> <i>Sarg.</i>
<i>C. holmesiana</i> <i>Ashe</i>	<i>C. submollis</i> <i>Sarg.</i>
<i>C. illinoiensis</i> <i>Ashe</i>	<i>C. succulenta</i> <i>Lk.</i>
<i>C. integriloba</i> <i>Sarg.</i>	<i>C. suborbiculata</i> <i>Sarg.</i>
<i>C. intricata</i> <i>Lange</i>	<i>C. venusta</i> <i>Beadle</i>
<i>C. jonesae</i> <i>Sarg.</i>	

R. A. Harper, Madison Wis.

<i>Pluteus patricius</i> <i>Schulz.</i>	<i>Gyromitra sphaerospora</i> (<i>Pk.</i>) <i>Sacc.</i>
<i>P. cervinus</i> (<i>Schaeff.</i>) <i>Fr.</i>	<i>Peziza amplispora</i> <i>C. & P.</i>
<i>Irpex fuscoviolaceus</i> <i>Fr.</i>	<i>Puccinia mesomegala</i> <i>B. & C.</i>
<i>Polyporus aurantiacus</i> <i>Pk.</i>	<i>Septoria salliae</i> <i>Ger.</i>

W. L. Smith, Albany

Macrosporium lagenariae *Thum.*

C. M. C. Lloyd, Gloversville

A specimen of "six-leaved" clover

New York State Agric. Society

Miscellaneous collection of dried plants, 398 numbers

C

SPECIES NOT BEFORE REPORTED

Delphinium ajacis L.

Near Niagara Falls. August. E. M. Wilcox. This is an introduced plant, which is cultivated for its flowers, but it sometimes escapes from cultivation. It resembles the closely allied *D. consolida*, from which it may be distinguished by its pubescent seed vessels.

Hypericum boreale (Britton) Bickn.

Shore of Piseco lake. August. Closely related to the common *H. mutilum* but separable from it by the stem, which is scarcely branched, except at the top, by the small bracts of the cymes being similar in shape to the leaves and specially by the seed vessels, which are decidedly longer than the sepals.

Vicia angustifolia Roth

Adams, Jefferson co. June. This is closely related to *V. sativa*, the common vetch, as a variety of which it is recorded in 46th Museum report, p.122. It is now considered a valid species and may be separated from its near relative by its more narrow linear or oblong, pointed leaflets.

Kneiffia longipedicellata Small

Sandy soil near Eastport, Suffolk co. August. A peculiar form having a flexuous much branched stem and leaves a little broader than in the typical form. A specimen collected near Quogue more nearly represents the typical form. The large flower and long peduncle are distinguishing characters of the species.

Lactuca virosa L.

This introduced plant is rapidly spreading and is already found growing freely in waste places about many of our cities and villages. It was formerly confused with *L. scariola*, a species which it closely resembles and which may be distinguished by its lower leaves being sinuate or sinuate pinnatifid and by its pale achenes. Specimens of this species were collected near Trenton Falls in August.

Hypochaeris radicata L.

Fields and roadsides. Cedarhurst, Nassau co. June. G. D. Hulst. Introduced. It has also been reported from Richmond county.

Artemisia stelleriana Bess.

Seabeach. Rockaway L. I. July. G. D. Hulst. The beach wormwood is very distinct from our other species of this genus and may easily be recognized by its dense, whitish coat of tomentum and its large, erect and crowded heads of flowers.

Xanthium commune Britton

Moist ground. Whitehall. September. In our specimens the hairs on the lower half of the beaks and prickles of the burs are whitish, instead of brown.

Aster roscidus Burgess

Roadside. Piseco, Hamilton co. August. A beautiful aster related to the large leaved aster, *A. macrophyllus*, but easily distinguished by the abundance of the glands on the upper part of the stem and also on the leaves.

Matricaria matricarioides (Less.) Porter

Waste places and roadsides. Lansingburg. June. This introduced plant is easily separated from our other species of the genus by the absence of ray flowers. In size and foliage it resembles the common mayweed, *Anthemis cotula*.

Antennaria fallax Greene

Bushy places, groves and borders of woods. Menands and Westport. May.

Antennaria ambigens (Greene) Fern.

Roadsides. Sandlake, Rensselaer co. May. Related to the preceding species but separable from it by its shorter stem, broader and closer stem leaves, which are glandular on the upper surface, and by the glandular, purplish hairs of the stolens.

Antennaria brainerdii Fern.

Pastures and shaded banks. Westport and Keene, Essex co. May. Related to *A. neodioica*, from which it may be sepa-

rated by the purple hairs of the stem, though these are sometimes few and scattered and easily overlooked. The plants of the Keene locality grew on a moist, partly shaded bank near the Willey house and are larger than the others.

***Antennaria petaloidea* Fern.**

In a recent clearing. North Elba, Essex co. June.

***Plantago halophila* Bickn.**

Sandy soil near Eastport, Suffolk co. and near Saranac lake, Franklin co. September. This plantain has generally been considered a form of *P. major*, but it may be distinguished by its pubescence, its smaller, thicker leaves with petioles shorter than the blades and by its curved scapes.

***Lycopus communis* Bickn.**

Near Port Jefferson, Suffolk co., and in the Adirondack region. This is closely related to *L. virginicus*, with which it has been confused and from which it may be separated by the tuberous base of the stem.

***Arisaema pusillum* (Pk.) Nash**

Fine specimens of this plant, which was formerly considered a variety of *A. triphyllum*, were found near Highland, Ulster co., in June, by C. J. Elting and contributed by him to the herbarium.

***Limnorchis media* Rydb.**

Swamps and wet places near Jordanville, Herkimer co. July. This and the next species were formerly thought to be forms of *Habenaria hyperborea*, which they closely resemble. State Museum report 50, 1:126.

***Limnorchis huronensis* (Nutt.) Rydb.**

Wet places and swampy ground about Jordanville. July. Also in Petersburg, Rensselaer co. A much smaller plant than the preceding. *L. dilatata linearifolia* Rydb. is represented in the herbarium by a specimen collected many years ago by Rev J. A. Paine near Hidden lake, Herkimer county.

Carex crawfordii Fern.

This sedge, which has long been known as *C. scoparia* var. *minor*, is common in wet places in the eastern and northern parts of the State. It has been raised to specific rank and given a new name by Mr Fernald.

Botrychium matricariae (Schränk) Spreng.

South Corinth, Saratoga co. August.

Pottia riparia Aust.

Limestone rocks. Near Chilson lake, Essex co. July. Sterile. Mrs A. M. Smith and Mrs C. W. Harris. This is a very small moss and one that is easily overlooked. It is rarely fertile.

Tortula ruralis Ehrh.

Limestone rocks. Green lake near Jamesville, Onondaga co. July. Mrs E. G. Britton. The specimens are without fruit.

Racomitrium heterostichum Brid.

Eagle rock gorge near Chilson lake. June. Mrs Smith and Mrs Harris. This is variety *gracilescens*, a slender moss, and these specimens are without fruit.

Encalypta rhabdocarpa Schwaegr.

Near Chilson lake. June. In fruiting condition. Mrs Smith and Mrs. Harris.

Hypnum lindbergii Limpt.

Regina swamp and Pyramid lake, near Chilson lake. September. Mrs Smith and Mrs Harris.

Lioclaena lanceolata Nees

Regina swamp near Chilson lake, growing on decaying wood. June. Mrs Smith and Mrs Harris. The specimens are fertile and in fine condition.

Amanita flavoconia Atk.

Woods and thickets. Adirondack mountains. July and August. Closely resembling *A. frostiana* in size and color but distinguishable by the even margin of the pileus, the floccose edge of the lamellae and the fragile character of the volva, which

easily separates from the slightly bulbous base of the stem and adheres to the soil that surrounds it. Both it and the annulus are of a beautiful, chrome yellow color.

***Tricholoma radicum* n. sp.**

PLATE 82, FIG. 15-19

Pileus fleshy, firm, umbraculiform or broadly convex, dry, minutely silky fibrillose or obscurely fibrillose squamulose, somewhat shining, pale grayish brown, the center usually darker and often tinged with reddish brown, the margin thin, cuticle separable, flesh white, taste disagreeable; lamellae thin, close, emarginate, adnexed, having a decurrent tooth, white; stem firm, nearly equal, hollow with a small cavity, slightly fibrillose, distinctly radicating, white; spores broadly elliptic, .0002-.00024 of an inch long, .00016-.0002 broad.

Pileus 2-3 inches broad; stem 1.5-4 inches long, 3-5 lines thick. Under coniferous trees. North Elba. September.

This mushroom loses its unpleasant flavor in cooking and is edible. A more full and popular description is given in another part of the report.

***Clitocybe inversa* (Scop.) Fr.**

Pine groves. Near Northville, Fulton co. August. A stout form with a thick stem.

***Mycena rugosoides* n. sp.**

PLATE M, FIG. 17-34

Pileus fleshy but thin, campanulate, usually broadly umbonate, glabrous, hygrophane, even but striate on the margin when moist, paler and uneven when dry, with close irregular radiating rugae, variable in color; lamellae subdistant, rounded or emarginate next the stem, adnexed, whitish or smoky white; stem long, even, glabrous, hollow, radicating, villose tomentose at the base, white or pallid, often tinged with reddish brown at the base; spores elliptic, .0003 of an inch long, .0002 broad, granular.

Pileus 6-12 lines broad; stem 1.5-3 inches long, .5-1.5 lines thick. Gregarious on much decayed, mossy, prostrate trunks of coniferous trees. North Elba. September.

Three forms occur which are separable by color. One is wholly white, another has the pileus and stem cinereous or grayish

brown and the lamellae white, the third has the pileus blackish brown, the stem pallid or grayish brown and the lamellae smoky white. Reddish stains sometimes occur on any part of the plant. These are possibly due to insect injury. The umbo is often very obtuse or almost flat at the top. This species is separated from *M. rugosa* by its moist umbonate pileus, its long stem, its straight, not oblique, rooting base and by its habitat. The villosity at the base of the stem is grayish white.

***Hygrophorus subrufescens* n. sp.**

PLATE M, FIG. 1-6

Pileus fleshy, but thin on the margin, convex or nearly plane, dry, minutely floccose squamulose, pale pink or grayish red, flesh whitish, faintly tinged with pink, taste mild; lamellae subdistant, decurrent, whitish; stem rather long, equal or nearly so, flexuous, glabrous, solid, white; spores elliptic, .0003 of an inch long, .0002 broad.

Pileus about 1 inch broad; stem 1.5-3 inches long, 2-4 lines thick. Among fallen leaves in woods. Port Jefferson, Suffolk co. August.

This species belongs to the section *Camarophyllus*, and is related to *H. leporinus*, from which it may be separated by its different color, thinner margin of the pileus and glabrous stem.

***Hygrophorus peckii* Atk.**

Woods, pastures and bushy places. July and August. Ithaca. G. F. Atkinson. Gansevoort, Saratoga co., Westport, Essex co. and Piseco, Hamilton co. It is most closely related to *H. psittacinus*, from which it is separated by its odor and decurrent lamellae.

***Lactarius luteolus* Pk.**

PLATE 83, FIG. 7-11

Among fallen leaves in woods. Port Jefferson. August. A very distinct species, easily known by its mild taste, copious milk, changing from white to brown on exposure to the air, and by the somewhat viscid pubescence of the pileus and stem. Milk flows readily from any part of the plant on the slightest injury, and wounds assume a dark brown color. The plant is edible; and is more fully described in another part of this report.

Russula magnifica n. sp.

PLATE N, FIG. 1-4

Pileus fleshy, firm, convex and umbilicate when young, centrally depressed or infundibuliform when mature, glabrous, viscid when young and moist, even, but the cuticle sometimes rimose squamose in the center; even on the margin, the thin pellicle subseparable, flesh white or whitish, odor and taste alkaline, strong and disagreeable; lamellae narrow, crowded, unequal, adnate or slightly decurrent, whitish with a faint pinkish reflection, becoming reddish brown where bruised and rusty brown when old; stem equal or narrowed downward, solid, becoming spongy or sometimes cavernous within when old, white; spores white, even or nearly so, subglobose, .0003-.0004 of an inch long, .00025-.0003 broad.

Pileus 4-10 inches broad; stem 2-5 inches long, 8-18 lines thick. Among fallen leaves in woods. Port Jefferson. August.

This is the largest species of *Russula* known to me. It is related to *R. delica* and *R. brevipes*, from which its large size, peculiar odor and viscid pileus separate it. Sometimes the surface of the pileus is irregularly spotted with small unequal depressions or cavities. The odor persists in the dried specimens.

Russula earlei n. sp.

PLATE N, FIG. 5-10

Pileus fleshy, firm, hemispheric, becoming broadly convex or nearly plane, sometimes centrally depressed, glabrous, very viscid, the margin even when young but sometimes rimose and uneven when old, stramineous, becoming paler with age, flesh whitish or yellowish, taste mild; lamellae thick, distant, adnate, with a few intermediate short ones near the margin, whitish becoming yellowish; stem short, firm, equal or nearly so, solid, becoming spongy within, white; spores white, subglobose, .0002-.00024 of an inch broad.

Pileus 1.5-2.5 inches broad; stem 1-1.5 inches long, 3-5 lines thick. Among fallen leaves in woods. Port Jefferson. August. The spores of this species are unusually small for the genus. This character, with the pale glutinous pileus and distant lamellae, marks the species as very distinct. I take pleasure in dedicating it to its discoverer, Professor F. S. Earle.

Marasmius biformis n. sp.

Pileus thin, submembranaceous, campanulate or nearly plane, generally umbilicate, glabrous, bay red or pale chestnut color and striatulate when moist, paler or grayish and rugosely striate when dry; lamellae rather close, adnate and joined together at the stem, grayish tinged with creamy yellow; stem slender, stuffed or minutely hollow, covered with a dense, downy pubescence, which is brown when moist, cinereous when dry, sometimes slightly tawny toward the base.

Pileus 4–8 lines broad; stem about 1 inch long, .5 of a line thick. Gregarious in groves of coniferous trees. Sandlake, Rensselaer co. August.

The species is closely related to *M. subnudus*, but the plant is much smaller, the pileus is usually umbilicate and the stem not inserted. The mycelium binds together a mass of dirt and needles which adhere to the base of the stem when the plant is taken from the ground. In some groups nearly all the pilei are campanulate, in others they are nearly plane. This feature is suggestive of the specific name.

Marasmius tomentosipes Pk.

Much decayed, mossy, prostrate trunks of trees. North Elba. September. Similar in color to *Omphalia campanella*, but differing in its more scattered mode of growth, its longer straight stem sprinkled with tawny mealy particles or covered with tawny tomentum and in its less distinctly umbilicate pileus. In our specimens the stem is flocculent mealy at the top, has scattered flocculent particles below and a copious tomentum at the base, all of a tawny color. The specimens revive under the influence of moisture as in the genus *Marasmius*, and for this reason they have been referred to this genus. The species was founded on specimens collected in Idaho.

Marasmius leptopus n. sp.

Pileus thin, broadly convex or nearly plane, glabrous, obscurely and rugosely striate on the margin, reddish brown; lamellae thin, narrow, close, adnate, white; stem slender, glabrous, hollow, inserted, whitish or pallid; spores oblong or narrowly elliptic, .0003–.00035 of an inch long, .00012–.00015 broad.

Pileus 3-5 lines broad; stem 1-1.5 inches long, about .5 of a line thick. Fallen leaves. Botanical garden, Bronx park. August.

Marasmius insititius Fr.

Fallen oak leaves. Port Jefferson. August.

Marasmius thujinus n. sp.

Pileus membranaceous, hemispheric or convex, often slightly umbilicate, subglabrous, distantly striate on the margin, cinereous tinged with lilac; lamellae few, distant, adnate, white; stem capillary, hollow, inserted, glabrous or with a few minute, scattered flocci toward the base, pallid, sometimes slightly brownish toward the base.

Pileus 1-1.5 lines broad; stem 6-12 lines long, scarcely thicker than a hair. Fallen leaves of arbor vitae, *Thuja occidentalis*. North Elba. September.

Under a strong lens the pileus is seen to be minutely pulverulent tomentose, and the stem adorned with a few minute, scattered flocci.

Leptonia hortensis n. sp.

Pileus thin, convex, umbilicate, hygrophanous, reddish brown and striatulate when moist, paler and silky when dry; lamellae thin, close, adnexed, whitish when young, pinkish when mature; stem short, thin, glabrous, hollow, colored like the pileus; spores angular, uninucleate, .0003-.0004 of an inch long, .0003 broad.

Pileus 5-10 lines broad; stem 8-12 lines long, about 1 line thick. Naked ground in gardens. Menands, Albany co. July.

Flammula pusilla n. sp.

PLATE M, FIG. 35-41

Pileus thin, convex becoming nearly plane, glabrous, viscid, pale buff or yellow ferruginous; lamellae narrow, close, adnate, whitish when young, brownish ferruginous when mature; stem short, equal, solid or stuffed, floccose fibrillose, whitish becoming ferruginous toward the base, which is slightly villose strigose, flocculent pulverulent at the top; spores elliptic, .0003 of an inch long, .00016 broad.

Pileus 6–12 lines broad; stem 8–15 lines long, about 1 line thick. Roots of stumps and water-soaked wood in open places. Smithtown, Suffolk co. August.

This species resembles small forms of *Naucoria semiorbicularis* in shape and color, but its more viscid pileus, adnate lamellae, solid or merely stuffed stem and peculiar habitat distinguish it. In very young plants a slight whitish veil is perceptible.

Craterellus subundulatus Pk.

Pileus thin, firm, subinfundibuliform, slightly floccose squamulose or fibrillose, grayish or grayish brown, wavy or lobed on the margin, the lobes often overlapping; hymenium slightly radiately rugose, creamy white; stem short, firm, solid, colored like the pileus; spores elliptic, .0003 of an inch long, .00016 broad.

Pileus 4–8 lines broad; stem 5–10 lines long, 1–1.5 thick. Gregarious or caespitose. Under beech trees. New York Botanical garden. August.

Closely related to *C. sinuosus*, from which it differs in its smaller size, solid, darker colored stem and slightly smaller spores. Formerly referred to the genus *Thelephora*.

Clavaria crassipes n. sp.

Stem thick, firm, solid or sometimes with a cavity at the base, glabrous white or whitish, repeatedly branched above, the branches very numerous, crowded, solid, terminating in obtuse or obtusely dentate tips, whitish or slightly yellowish; spores oblong, uninucleate, .0006–.0007 of an inch long, .00025–.0003 broad, with an oblique apiculus at the base.

Plant 3–6 inches high, 2–4 inches broad in the widest part, with the short stem about 1 inch thick. In woods and groves. Sand-lake. August.

The flesh of the stem when cut or broken slowly assumes a smoky brown color.

Clavaria tsugina n. sp.

Stem very short, glabrous, branching from the base, solid, the branches few or many, suberect, sometimes crowded, flexible, rather tough, solid, terminating in acute tips, young plants and growing tips creamy yellow, older parts and mature plants

vinaceous cinnamon or reddish brown, spores ochraceous, elliptic, .0003 of an inch long, .00016 broad.

Plants 1-3 inches high, nearly as broad in the widest part. Prostrate, decaying trunks of hemlock, *Tsuga canadensis*. Adirondack mountains. July and August. Closely allied to *C. abietina*, from which it differs in its naked stem, in having no bitter flavor and in wounds not assuming a green color.

***Secotium warnei* Pk.**

Near Gouverneur, St. Lawrence co. October. Mrs. E. C. Anthony. This is the most eastern station known to me for this western species. It has been thought by some mycologists to be the same as *S. acuminatum*, but it appears to me to differ constantly from the description of that species in shape and color. It is very variable in shape and is sometimes umbonate, but I have never seen any specimens that could properly be called acuminate, nor any having an ochraceous or alutaceous color. It does not seem to be wise to give up a certainty for an uncertainty and to throw together forms which are constantly diverse.

***Tylostoma poculatum* White**

Sandy soil. Karner, Albany co. Our specimens are a little smaller than the typical form, which was collected in Nebraska.

***Tylostoma punctatum* Pk.**

Sandy soil. West Albany. May. Formerly confused with *T. fimbriatum*, from which it may be distinguished by the punctate inner peridium.

***Licea variabilis* Schrad.**

Decaying wood of spruce. Oldforge, Herkimer co. August. Very variable in form. Sometimes the spores adhere to each other in groups.

***Aecidium ligustri* Strauss**

Living leaves of privet, *Ligustrum vulgare*. Menands. June. Altamont. F. J. H. Merrill.

***Cintractia affinis* n. sp.**

Stroma continuous, usually surrounding the stem of the host plant and forming patches 6-24 lines long, at first covered by a

white crust, which at length ruptures and disappears, exposing the surface of a jet black, firm, but slightly pulverulent spore mass; spores globose or subglobose, minutely and closely papillose, involved in a thin, obscure, hyaline, gelatinous coat, black, .0006-.0008 of an inch broad.

Living stems of *Rhynchospora macrostachya* Torr. Smithtown, Suffolk co. August.

This interesting species is closely related to *C. leucoderma*, from which it differs in its longer, thinner and more intensely black spore mass, which occupies the stem instead of the sheaths and flower spikes, and by its more globose spores, which are minutely and closely but not spirally papillose. Two spore masses usually develop on one stem. These are commonly separated by a slight interval. Occasionally the lower is free from the white crust, while the upper still retains it. The thickness of the spore mass, including the inclosed stem, is usually 1-1.5 lines.

Phyllosticta grisea n. sp.

Spots suborbicular, small, 1-1.5 lines broad, arid, gray with a purplish brown margin, brown beneath, occasionally brown above; perithecia epiphyllous, minute, erumpent, black; spores elliptic, hyaline, .00025-.0003 of an inch long, .00016 broad.

Living leaves of *Crataegus praecox*. Crown Point. September.

Gloeosporium phaeosorum Sacc.

Dead canes of blackberry. Farmer, Seneca co. May. F. C. Stewart.

Sporotrichum poae n. sp.

Hyphae slender, .00008-.00012 of an inch thick, procumbent, branched, slightly interwoven, white; spores colorless, subglobose, .00016-.00032 of an inch broad.

Sheaths and culms of Kentucky blue grass, *Poa pratensis*. Geneva. June. F. C. Stewart. The fungus occurs both without and within the sheaths of culms that have died, but whether their death was due to the attack of the fungus or of insects is not clear.

Penicillium digitatum (Fr.) Sacc.

Decaying lemons. Albany. Sometimes the whole surface of the lemon is covered with a dusty, bluish green coat of this mold.

Penicillium pallidofulvum n. sp.

Sterile hyphae creeping, forming a stratum of dense, tawny tomentum; fertile hyphae erect, septate, simple or with one to three short branches or protuberances at the top; spores catenulate, elliptic, .00012-.00016 of an inch long, at first white, soon pale tawny or ochraceous.

Parasitic on *Lactarius deceptivus*. Round Lake. July.

Macrosporium lagenariae Thum.

On fruit of gourds, *Lagenaria vulgaris*. Albany. January. W. L. Smith.

Fusarium laxum n. sp.

Tufts minute, loosely gregarious, white; sporophores slender; spores narrowly fusiform, slightly curved, 3-5 septate. hyaline, .001-.002 of an inch long.

Dead stems of scouring rush, *Equisetum hiemale*. Delmar. July. Apparently a peculiar species belonging to the section *Fusisporium* but having tufted sporophores.

Stilbum resinaria n. sp.

Stem cylindric, about .25 of a line long, white; capitulum globose or depressed globose, creamy yellow; spores minute, subglobose, .00008-.00012 of an inch long, nearly as broad.

Resinous spots on bark of balsam fir, *Abies balsamea*. Adirondack mountains. Closely allied to *S. rehmanium*.

Helvella ambigua Karst.

Decaying wood. Piseco. August. G. F. Atkinson. This species may easily be confused with *H. infula*, from which it scarcely differs except in its pileus having a reticulated surface and in its longer, more fusiform spores.

Detonia fulgens (Pers.) Rehm

Under spruce and balsam fir trees. North Elba. May. Near Ithaca. April. E. J. Durand.

Geopyxis carbonaria A. & S.

Burnt soil. Ithaca. May. Specimens of this and the nine following species were contributed by Mr Durand.

Calloria caulophylli (E. & E.) Rehm

Dead stems of blue cohosh, *Caulophyllum thalictroides*. Ithaca. May.

Lachnum inquinum (Karst.) Schroet.

Dead stems of scouring rush, *Equisetum hiemale*. Ithaca. May.

Sclerotinia smilacinae Durand

Dead rootstocks of wild spikenard, *Smilacina racemosa*. Ithaca. May.

Ciboria americana Durand

Dead chestnut burs. Ithaca. October.

Ciboria sulphurella (E. & E.) Rehm

Dead petioles of ash leaves. Farmington, Ontario co. September.

Peziza violacea Pers.

Burnt soil. Ithaca. May.

Caldesia sabinae (Dellot) Rehm

Loose bark of red cedar, *Juniperus virginiana*. Ithaca. November.

Helotium scutula vitellinum Rehm

Dead stems of herbs. Ithaca. October.

Ascobolus atrofuscus Ph. & Pl.

Charred wood. Canandaigua. September.

Melanospora vervecina (Desm.) Fckl.

Decaying wood of yellow birch, *Betula lutea*. North Elba. September.

Leptosphaeria variegata n. sp.

Perithecia numerous, minute, depressed globose, seated on indeterminate spots of a pinkish, grayish or brownish color, at first covered by the epidermis, then erumpent, black; asci cylindric;

spores oblong or subfusiform, triseptate, colored, .0007-.0008 of an inch long, .00016-.00018 broad.

Dead stems of pokeweed, *Phytolacca decandra*. Near Trenton Falls. September.

D

REMARKS AND OBSERVATIONS

Lepidium virginicum L.

A dwarf form, 4 to 8 inches high and without branches, or nearly so, was found growing in sandy soil near Delmar. A similar form of *L. apetalum* Willd. was found growing from a thin coating of vegetable mold covering flat surfaces of outcropping rocks near Westport. This was in flower in May, the other in July.

Lepidium ruderales L.

Fine specimens of this species were found by the roadside near Lansingburg. May and June.

Raphanus raphanistrum L.

A form with flowers of a peculiar brownish buff color, changing to reddish brown with age, was found growing in sandy soil near Karner. It was associated with the ordinary form and with the cultivated radish, *R. sativus*.

Viola papilionacea domestica (Bickn.) Poll.

Waste places about Port Jefferson. August. In fruit from cleistogamous flowers.

Drosera rotundifolia L.

A form of the round leaved sundew occurs near Port Jefferson, in which the scape divides above, forming two flowering branches with a flower in the axil.

Rubus occidentalis pallidus Bail.

Near Albia, Rensselaer co. In fruit in July. This differs from the common form of the species in having pale yellowish fruit.

Kneiffia pumila (L.) Spach

A much branched form, with branches straight and erect, or nearly so, and flowering abundantly, was found near North Albany in July.

Myriophyllum humile (Raf.) Morong

Muddy shore of a small pond near Smithtown, Suffolk co. August. A small, rare and pretty little plant.

Erigeron ramosus (Walt.) B. S. P.

The variety *discoideus* has been unusually plentiful about Albany the past season. The peculiarly cool, wet season was probably favorable to it.

Galinsoga parviflora hispida DC.

This introduced plant is reported by Mrs M. A. B. Kelly to be acting like a pestilent weed in a garden at Gloversville.

Antennaria neglecta simplex n. var.

Stems 7-9 inches long, heads of flowers single or occasionally two, very rarely three; involucral bracts oblong or linear, acute or the outer obtusish, brownish with white tips. Sandlake. May.

These plants grew in a patch about 6 feet in diameter. They have a peculiar appearance by reason of the single heads.

Helianthus giganteus L.

Roadsides. Keene, Essex co. September. A rare plant in this part of the State.

Polymnia canadensis radiata Gray

Near Syracuse. June. Miss M. L. Overacker.

Xanthium canadense L.

A dwarf form of this species, 6-10 inches high, is plentiful on sandy and gravelly shores of Lake Champlain at Crown Point. The burs sometimes have but one beak, and the prickles are strongly curved.

Verbena hastata L.

A plant having a close resemblance to this species was collected at Trenton Falls. Its spikes are less dense, and its flowers are pink. It is probably a hybrid of *V. hastata* and *V. urticifolia*.

Origanum vulgare L.

A white flowered form occurs at Trenton Falls.

Tetragonanthus deflexus (Sm.) Kuntze

This is *Halenia deflexa* of the *Manual* and is a rare plant in our State. It was found many years ago near Trenton Falls by Dr J. V. Haberer. In company with him, I visited the locality in August last and found the plant still there but in small quantity. A specimen in the herbarium represents another locality for it in Sullivan county. In *New York State Flora* Dr Torrey credits it to margins of lakes in the northern part of the State on the authority of Dr Hadley. It is desirable that any one finding it within our State should guard as far as possible against its extermination.

Physalis heterophylla ambigua (Gray) Rydb.

Sandy soil. Karner, Albany co. June and July. In our specimens the anthers and their short, thick filaments are purple when young. The greenish yellow corolla has the brown central spot lobed, and from the lobes brown lines radiate, giving the spot a fringed appearance. The lower leaves are often orbicular.

Polygonum convolvulus L.

A form having a short, erect, sparingly branched stem occurs in sandy soil about Karner. It corresponds to variety *breve* of *P. cilinode*.

Lilium canadense L.

The Canada lily was found growing in great abundance in a low, wet meadow near Mount Kisco, Westchester co., by W. P. Judson. The plants were small, the stems short and slender, each bearing, in most cases, a single small flower, and the leaves were smaller than usual. In an adjoining meadow on higher and drier ground the usual form of the species was plentiful. The two forms afford a good illustration of the influence of soil and moisture on plant development. The cold, wet soil of the low meadow was evidently unfavorable to the proper development of this lily, and suggests the importance of a well drained soil for plants that do not like cold, wet feet.

Scirpus sylvaticus bissellii Fern.

Low ground. West Albany. Several years ago a single specimen of this variety, was collected by the late Rev. J. H. Wibbee and presented to the herbarium. The station has since been destroyed, and I know of no other in the State where this variety has been found.

Sporobolus longifolius (Torr.) Wood

Rocky sides of Skenes mountain, Whitehall. September. It was associated with *Sporobolus neglectus* and *Aster concinnus*. *Quercus acuminata* (Mx.), the eastern form of which is *Q. alexanderi* Britton, was growing near it. This mountain is an interesting botanical station.

Buxbaumia indusiata Brid.

Near Rochester. October. M. S. Baxter. This is the fourth and most western station for this rare moss in our State. It has been found in the Catskill mountains and in two places, Horse-shoe pond and Lake Placid, in the Adirondack mountains.

Amanitopsis volvata (Pk.) Sacc.

An unusual form of this species was found in the wooded grounds of the New York botanical garden. A part of the volva was closely adherent to the center of the pileus, as in *Amanita calyptrata*, and the base of the stem was more closely sheathed than usual by the remains of the volva.

Amanitopsis strangulata Fr.

Piseco and North Elba. August and September. This northern form differs from the more southern one in having the pileus adorned with unequal fragments of the ruptured volva instead of nearly equal, wartlike remnants.

Clitocybe dealbata deformata n. var.

Pileus thin, very irregular, convex or centrally depressed, wavy or lobed on the margin, the upper surface sometimes partly transformed into a hymenium consisting of daedaloid pores in the center and branching and anastomosing lamellae toward the margin, snowy white where free from hymenial development,

flesh pure white, taste farinaceous; lamellae close, adnate or slightly decurrent, transversely venose, often anastomosing or connected by veins, frequently eroded on the edge and sometimes transversely split, whitish; stem irregular, sometimes compressed, more or less confluent at the base, stuffed or hollow, white, with a soft, pure white, downy tomentum below; spores subglobose .00012-.00016 of an inch long, nearly as broad.

On mushroom beds in a greenhouse. Newark, Wayne co. March. C. E. Clark and B. C. Williams. The specimens grew in mushroom beds made in a poorly lighted apartment, in which a temperature of 55°-60° was maintained. These conditions doubtless had some influence in causing the irregular, tufted mode of growth. In their pure whiteness and in the tendency of the gills to anastomose these mushrooms resemble *Clitocybe similis*, but the thin pileus and the farinaceous taste and odor indicate a relationship with *C. dealbata* so intimate that it is recorded as a variety of it. That species is also sometimes found growing in mushroom beds.

Clitocybe multiceps Pk.

A singular form of this species was found growing under a flagstone in Newark by Mr B. C. Williams. In the effort to expand the pileus in the open air, the stem was greatly elongated. In one specimen the stem was 13 inches long, in the other, 16.

Clitocybe tortilis gracilis n. var.

Pileus thin, convex and slightly umbilicate, becoming centrally depressed or infundibuliform with age, irregular, striate on the margin and reddish flesh color when moist, paler when dry; lamellae broad, distant, adnate or decurrent, pruinose when old and dry; stem slender, firm, glabrous, hollow but the cavity small.

Pileus 3-6 lines broad; stem 6-10 lines long, about .5 of a line thick. Gregarious on moist, shaded ground. New York Botanical garden. August. F. S. Earle.

This differs from the typical form of the species in its more slender stem, more distant lamellae and more funnel-form pileus.

Collybia uniformis Pk.

PLATE M, FIG. 7-16

Specimens larger than the typical form were found in North Elba, growing on decaying wood of balsam fir, *Abies balsamea*. After the moisture has escaped from the pileus, it has a pruinose appearance, which is due to a minute, whitish pubescence. The stem is sometimes compressed. In its general characters and tufted mode of growth it is closely allied to *C. familia*.

Lactarius subdulcis oculatus n. var.

PLATE 83, FIG. 20-24

Pileus moist, subhygrophanous, vinaceous buff with a small central spot or umbo persistently reddish brown or chestnut color. Otherwise like the species. Under spruce and balsam fir trees. North Elba. September.

Hygrophorus capreolarius Kalchb.

This beautiful species inhabits groves of spruce and balsam fir in North Elba, but I have seen it in no other part of the State. It is gregarious or cespitose, has an attractive appearance and an agreeable flavor when fresh, but when fried in butter it develops a bitter taste which makes it objectionable as an edible mushroom.

Russula olivascens Fr.

Port Jefferson. August. European authors in their descriptions of this species do not mention the color of the spores. In our plant they are ochraceous.

Russula granulata lepiotoides Atk. in litt.

This variety differs from the typical form in its pileus, whose upper surface soon becomes rimose squamose. It was common, in August, in the woods about Piseco, Hamilton county.

Cantharellus cibarius albipes n. var.

This differs from the usual form of the species in having the stem white.

Stropharia siccipes radicata n. var.

Differs from the species in having a long, radicating base to the stem. This probably depends on and is due to the fact that it

grows from manure buried in the earth. New York Botanical garden. June. F. S. Earle. Menands. July.

Marasmius resinosus niveus n. var.

Whole plant pure white. In other respects like the species. Port Jefferson. August.

Hypholoma sublateritium squamosum Cke.

Differs from the typical form in having the pileus spotted with brownish, fibrillose scales. In the dried specimens these scales are less distinct. Piseco. August.

Hypholoma subaquilum Banning

Decaying, prostrate trunks of trees in woods. Piseco. August. This species sometimes occurs in great abundance. The margin of the pileus is often adorned with whitish, floccose fibrils of the veil, which in the young plant may be interwoven and form a delicate membrane which conceals the lamellae. As the pileus expands, this separates from the stem and adheres to the margin of the pileus, curving under and still hiding the outer extremities of the lamellae. In the mature plant, however, all vestiges of the veil have generally disappeared. This species is most closely allied to *H. appendiculatum*, scarcely differing from it except in the darker color of the young lamellae and the smaller spores. Like that species it is hygrophanous, becoming paler and rugose in drying.

Coprinus micaceus Fr.

Specimens of the glistening coprinus were found growing from a stratum of its coarse, felty ozonium or mycelium, which had overspread a part of the surface of an old, prostrate tree trunk in woods near Piseco. August.

Merulius tenuis Pk.

Much decayed wood. Piseco. The type specimens of this species were collected near Ithaca by Professor W. R. Dudley. Fine specimens of it were collected at Piseco by Professor G. F. Atkinson. It is a rare species.

Odontia lateritia B. & C.

On a decorticated, prostrate pine trunk in woods. North Elba. September. The specimens on pine are thinner than those on oak, and, where the surface of the wood is smooth, the fungus is to some extent separable from it. The species is doubtless the same as *Phlebia hydnoidea* Schw. and should take the name *Odontia hydnoidea* (Schw.).

Nidularia pulvinata (Schw.) Fr.

Fine specimens were found in North Elba, growing on decorated wood of spruce. This fungus was first described by Schweinitz under the name *Cyathus pulvinatus*. Fries changed the name to *Nidularia pulvinata*, and recently the species has been transferred to another genus, and it stands as *Granularia pulvinata* (Schw.) White.

E

EDIBLE FUNGI

Tricholoma subacutum Pk.

SUBACUTE TRICHOLOMA

PLATE 82, FIG. 7-14

Pileus ovate or subcampanulate, becoming broadly convex or nearly plane, usually prominently and acutely umbonate, dry, silky fibrillose or virgate with innate brown or blackish fibrils, cinereous, grayish brown or blackish brown, the umbo commonly darker, sometimes black; lamellae rather close, rounded behind, adnexed, white; stem rather long, equal, solid, silky fibrillose, white; spores broadly elliptic or subglobose, .00025-.0003 of an inch long, .0002-.00025 broad.

The subacute tricholoma is easily recognized by its prominent pointed umbo, by the minute, radiating, brown or blackish lines or fibrils on its dry cap and by the white color of its flesh and stem. It is not abundant, and has been found by me in North Elba only. It grows in woods and in groves of young spruce and balsam fir trees, appearing in September. The cap varies in color, being pale gray, grayish brown or blackish brown. The umbo is frequently darker than the rest, and in dark colored

specimens it is nearly or quite black. The cuticle is separable from the white flesh beneath. The flesh has no decided odor, and its taste is sometimes acrid and sometimes mild. The gills are rather broad but close, rounded behind and slightly attached to the stem. They are white, but are apt to become dingy or brownish in drying. The stem is rather long, equal, smooth or slightly fibrillose, solid, or hollow from the erosion of insect larvae and white.

The cap is 1.5–3 inches broad; the stem 2–4 inches long, 3–6 lines thick. The species is so closely related to the European virgate tricholoma, *Tricholoma virgatum*, that it is with some hesitation that I have kept it distinct. In the virgate tricholoma the taste is described as bitter, intensely bitter or bitter in the young plant and more mild in the mature one, the umbo is represented as low, broad and blunt and the cuticle on it as breaking up and forming scales. The stem is described and figured as more or less bulbous. These characters are not found in our plant, and their absence seems to justify its separation.

Tricholoma radicatum Pk.

ROOTED TRICHOLOMA

PLATE 82, FIG. 15–19

Pileus fleshy, deeply or broadly convex, dry, silky fibrillose or minutely squamulose, grayish brown, the center darker and often tinged with reddish brown, flesh white, taste disagreeable; lamellae thin, close, emarginate, adnexed, white; stem equal or nearly so, radicating, hollow, white; spores broadly elliptic or subglobose, .0002–.00024 of an inch long, .00016–.0002 broad.

The rooted tricholoma is a rare species with us. It occurs under spruce, balsam fir and other cone bearing trees in North Elba, and is solitary or scattered in its mode of growth. It was found in September and is apparently an autumnal species. Its cap is broadly convex when mature, but in immature plants it is similar in shape to an open umbrella. It is firm but flexible, and its cuticle is separable from the white flesh. The surface is dry, minutely silky and sometimes roughened with minute scales. Its color is gray or grayish brown, generally a little darker in the center, where it is tinged with reddish brown. The flesh is

white, but its taste is unpleasant. The gills are closely placed, wide in the middle, excavated at the stem end, where there is a slight prolongation running down on the stem and giving its top a striated appearance. Their color is white and unchangeable. The stem is smooth or slightly fibrillose, hollow but with a small cavity and white. There is a rootlike prolongation at the base, which tapers downward and penetrates the earth.

The cap is 2-3 inches broad; the stem 1.5-4 inches long, 3-5 lines thick. The unpleasant flavor is lost in cooking.

***Tricholoma silvaticum* Pk.**

WOOD TRICHOLOMA

PLATE 82, FIG. 1-6

Pileus convex or nearly plane, dry, glabrous, subumbonate, whitish; lamellae broad, ventricose, subdistant, adnexed, white; stem equal or nearly so, glabrous, solid, white; spores elliptic .00045-.0005 of an inch long, .00025-.0003 broad.

The silvan tricholoma is a small, well formed mushroom, growing among mosses or fallen leaves in woods. Its cap is convex or nearly plane with decurved margin. It is generally crowned with a broad, slightly elevated umbo, and is smooth, dry and whitish. The flesh is thin and white, the taste farinaceous. The gills are broad with broad interspaces. They are deeply notched next the stem and white. The stem is equal in diameter in all its parts or sometimes slightly tapering upward. It is smooth or obscurely fibrillose, slightly mealy or pruinose at the top, solid, firm and white.

The cap is 1-1.5 inches broad; the stem 1-2 inches long, 2-4 lines thick. This species has been found by me in North Elba only. It occurs in September. It may be separated from the white cap tricholoma, *T. leucocephalum*, and from the disagreeable tricholoma, *T. inamoenum*, by the absence of any distinct odor and by the color of its cap, which is not pure white, as in these species but a creamy white or pale buff.

***Hygrophorus pudorinus* Fr.**

BLUSHING HYGROPHORUS

PLATE 83, FIG. 1-6

Pileus fleshy, firm, convex becoming nearly plane, glabrous, viscid when moist, pinkish buff, flesh white, taste mild; lamellae

distant, adnate becoming decurrent, white; stem stout, solid, equal, white, roughened with white points at the top; spores white, elliptic, .0003-.0004 of an inch long, .00016-.00024 broad.

The blushing hygrophorus is a large and beautiful species, clean and attractive and a fine addition to our list of edible mushrooms. It is gregarious or tufted in its mode of growth and grows most frequently but not always under spruce and balsam fir trees, or where these trees have previously grown. It appears late in the season. Our plant differs in some minor features from the description of the European plant, but in essential characters the agreement is so close that there can be little doubt of its identity. Its fleshy, firm cap is convex or broadly conic when young, with the margin involute and often downy and studded with drops of moisture, though the margin in the European plant is described as naked. When mature it is broadly convex or nearly plane, but sometimes has a broad but slight central elevation or umbo. It is very smooth, viscid when moist and of a beautiful, delicate pinkish buff color, sometimes slightly tinged with brown or reddish brown in the center. The flesh is white, slightly tinted under the thin, separable pellicle with the color of the cap. The flavor is mild, and it has no very distinct odor. The gills are at first attached to the stem by the entire width of the inner extremity, but, when the cap is fully expanded, they are somewhat decurrent. They are rather wide apart, white and sometimes have a slight salmon-colored reflection. The stem is stout, nearly equal in diameter throughout but sometimes abruptly pointed at the base, solid, white and roughened with white points at the top. These points or dots are apt to become reddish in drying and they sometimes extend nearly to the base of the stem. The stem of the European plant is described as constricted at the top, but figures of it by European mycologists do not show this character, from which I conclude that it is not constant.

The cap is 2-4 inches broad; the stem is 2-5 inches long, 6-10 lines thick. Fried in butter, it has an agreeable flavor and may easily be placed among the first class mushrooms.

Lactarius luteolus Pk.

YELLOWISH LACTARIUS

PLATE 83, FIG. 7-11

Pileus fleshy, firm, convex or nearly plane, sometimes umbilicately depressed in the center, pruinose, more or less rugose, yellowish or buff color, flesh white, becoming brown where wounded, taste mild, milk copious, white or whitish, changing to brown; lamellae close, adnate or slightly rounded behind, whitish, becoming brown where wounded; stem short, equal or tapering downward, firm, solid or somewhat spongy within, white or buff color; spores white, globose, .0003 of an inch broad.

The yellowish lactarius is a very distinct species, easily known by its buff color, copious white milk, changing to brown on exposure to the air, and by its minutely velvety cap, which to the naked eye has a pruinose appearance. The cap is broadly convex or nearly flat when mature, sometimes with a slight central depression. Its surface is seen by the aid of a lens to be covered with a minute velvety pubescence, which is soft to the touch and when moist is slightly sticky. The surface is sometimes even but more often rugose. Occasionally there is a narrow encircling furrow or band near the margin. The color is whitish, buff or yellow buff, becoming more pronounced in drying. The flesh is white or whitish. Wounds of any part of the plant assume a brown color. The gills are narrow, closely placed, attached to the stem but scarcely decurrent on it, whitish. The stem is short, cylindric or rarely tapering downward, solid or somewhat spongy in the center and colored like the cap.

The cap is 1.5-3 inches broad; the stem is 1-1.5 inches long, 3-5 lines thick. The plant grows in a scattered manner among fallen leaves in woods and appears in August. *Lactarius foetidus*, the fetid lactarius, is closely related and may yet prove to be a mere variety having a strong disagreeable odor and less copious milk.

Lactarius subdulcis (Bull.) Fr.

SWEET LACTARIUS

PLATE 83, FIG. 12-24

Pileus thin, broadly convex becoming nearly plane or centrally depressed, usually with a small papillalike umbo, even, glabrous,

zoneless, tawny red, bay red or cinnamon red, flesh whitish, often tinged with red, taste slightly or tardily acrid, milk white, unchangeable; lamellae thin, close, adnate or slightly decurrent, whitish, pallid or rufescent; stem short, equal or tapering upward, stuffed or hollow, glabrous, colored like or a little paler than the pileus; spores white, globose, .0003-.00035 of an inch broad.

The sweet lactarius is one of our most common species. It is rather small, but it often grows in sufficient abundance to compensate for its deficiency in size. It is gregarious in its mode of growth and occurs in a great variety of soil and location. It may be found in woods and in open places, on naked soil or among fallen leaves or growing from decaying wood or among living mosses. In dry weather, when it can no longer be found in exposed dry places, it still persists in swamps, sphagnous marshes and wet, shaded places. It appears from June to October.

Its cap is generally broadly convex or nearly plane, but sometimes by the elevation of the margin it becomes centrally depressed or almost funnel-form. Usually there is a small prominence or umbo in the center, but often this is entirely absent. The surface is quite smooth and sometimes moist and shining. Its color varies from light red or yellowish red to bay red. The margin is sometimes wavy or lobed. The gills are thin, narrow, closely placed and vary in color from whitish to rufescent, resembling the cap in color. The stem may be short or long according to its place of growth. When growing among mosses, it is apt to be longer than on bare ground. Sometimes there is a coarse villosity or hairiness at the base of the stem, otherwise it is smooth. It is generally hollow and brittle. In color it is similar to or a little paler than the cap. The white milk does not change color, and the taste varies somewhat, being in some cases almost mild, in others tardily but decidedly acrid.

The cap is usually 1-2 inches broad; the stem 1-2.5 inches long, 1-3 lines thick. The acrid taste is lost in cooking, and when fried in butter it may be regarded as a fairly good though not highly flavored mushroom. Several varieties of this variable species have been described, but a well marked one, of which I

find no description, was discovered in North Elba, and is described in another place in this report, under the name *Lactarius subdulcis oculatus*. The varietal name is suggested by the dark colored umbo or eyelike spot in the center of the cap.

***Russula crustosa* Pk.**

CRUSTED RUSSULA

PLATE 81, FIG. 1-7

Pileus fleshy, firm, very convex becoming nearly plane or centrally depressed, slightly viscid when moist, even or striate and rimose areolate on the margin, commonly even in the center, flesh white, taste mild or sometimes tardily acrid; lamellae moderately close, narrowed behind, some of them forked, white; stem short, stout, equal, stuffed or hollow, white; spores white, subglobose or broadly elliptic, .0003-.0004 of an inch long, .00025-.0003 broad.

The crusted russula is closely related to the greenish russula, *R. virescens*, and the cracked russula, *R. cutefracta*. From the former it differs in its slightly viscid cap of which the cuticle cracks and forms small, crustlike patches or scales on the margin but usually remains entire in the center; from the latter it is distinct by the absence of any red or purplish tints in the flesh and the stem. Even in purplish specimens the flesh and stem are wholly white.

The cap is very convex or almost hemispheric when young, nearly plane or centrally depressed when mature. The surface cracks toward the margin as in *R. cutefracta*, while the center nearly always remains entire. These surface chinks form small areolae or scales which appear like fragments of a crustaceous cuticle.

The color varies greatly. It may be straw yellow, pale ochraceous, brownish ochraceous, greenish with a yellowish or pale ochraceous center or a dull brownish purple. The center is sometimes paler, sometimes darker than the margin. The flesh is white, and the taste mild or sometimes slightly and tardily acrid. The acidity if present is destroyed by cooking. The gills are white, narrowed toward the stem and nearly free. They are sometimes forked, specially near the stem, and intervening

short ones occur near the margin. They are white and unchangeable. The stem also is white. This mushroom is more common with us than the greenish russula, which it resembles in size and flavor. It grows in woods and open ground and appears in July and August.

Cantharellus dichotomus Pk.

DICHOTOMOUS CHANTARELLE

PLATE 84, FIG. 8-21

Pileus fleshy, soft and flexible, subconic when young, with the margin involute and downy or flocculent, convex, nearly plane or centrally depressed when mature, even or with a small pointed umbo, dry, glabrous, variable in color, flesh white, taste mild; lamellae narrow, close, dichotomous, decurrent, white or yellowish; stem equal or tapering upward, solid, glabrous or slightly fibrillose; spores narrowly elliptic, .0003-.0004 of an inch long, .00016 broad.

The dichotomous chantarelle is a small but common species in our hilly and mountainous districts. It grows in woods among mosses or in pastures and bushy places among grasses and fallen leaves. The cap is generally broadly convex with decurved margin, but sometimes it becomes centrally depressed by the elevation of the margin. The umbo is small and usually acute, or papillalike, but it is often entirely absent. The margin is involute and minutely flocculent or downy when young, but it soon becomes naked. The surface is smooth or obscurely silky and occasionally becomes minutely rimose areolate. The color is very variable and may be grayish white, grayish brown, yellowish brown, blackish brown or bluish gray. The flesh is white or whitish, and the taste mild. The gills are narrow, thin, close, decurrent and 1-3 times forked. They are white or whitish, sometimes tinged with yellow. In moist weather wounds of them and also of the stem sometimes become reddish. The stem is equal in diameter or slightly tapering upward. It is glabrous or slightly fibrillose, solid, whitish or pallid or colored like the pileus, and when growing among mosses is clothed below with a soft, dense, white tomentum, which binds it so closely to the mosses that it is difficult to take a specimen without breaking the stem unless the mosses are taken with it.

The cap is 6-18 lines broad, the stem is 1-3 inches long, 2-4 lines thick. It is gregarious and appears from July to September. As an edible mushroom it is not as tender as some nor as highly flavored, but it is satisfactory and enjoyable.

It is related so closely to *Cantharellus umbonatus* that it has sometimes been regarded as a variety of it or has even been confused with it, but the gills of that species are described as straight, and in our plant they are constantly repeatedly forked as in *C. aurantiacus* and *C. albidus*. The umbo in our plant is small and pointed and often wholly wanting, but in *C. umbonatus* it is represented as broad and blunt. Because of these discrepancies it seems best to keep our plant distinct.

F

PLANTS OF THE SUSQUEHANNA VALLEY AND ADJACENT HILLS OF TIOGA COUNTY

BY FRANK E. FENNO

The territory included in this flora consists of a strip of land about 8 miles wide, lying on both sides of the Susquehanna river and extending nearly east and west through the county. Its surface is broken by the foothills of the Alleghany mountains. These consist of a series of ridges from 1200 to 1500 feet above tide. They are divided diagonally by the valley of the Susquehanna and separated laterally by the valleys of the Apalachin, Wapasening, Owego, Catatonk, Pipe and Cayuta creeks. These creeks have rapid currents. Their valleys are narrow in the upper part, but expand toward the river into broad and level fields.

The Susquehanna winds its way through a tortuous valley bordered on either side by banks, which generally slope gradually to the broad and rolling hilltops. Yet the valley is defined in some places by steep and rocky acclivities which rise from 300 to 400 feet above the surface of the river. These acclivities furnish congenial homes for many rock-loving species of plants. The soil in the valleys is mainly alluvial, lying on a deep drift consisting of sand, gravel and clay. This drift forms the soil of the adjacent hills. The territory contains very little

broken country, and the rock outcrops are all sandstone belonging to the Chemung group. Yet the conditions are such as are favorable to plant life and to a rich and diversified flora. A few plants of the region farther north have been brought down by the mighty torrent of the river, while others have slowly crept up from the ocean, and have found congenial homes in the alluvial soil along the river. The writer's knowledge of this flora has been acquired during his past seven years' residence in Tioga county. He has gone over the entire territory and has collected specimens of nearly every species and variety included in this list.

The *Illustrated Flora* of Britton and Brown has chiefly been followed in nomenclature and in the arrangement of orders. When the names of the species and varieties differ from those in the sixth edition of Gray's *Manual*, the names in the latter are given second place.

Cordial acknowledgment of assistance in the identification of critical species is hereby tendered to Professor F. Lamson Scribner, Edward S. Burgess, Dr John K. Small, Dr Nathaniel L. Britton and specially to Charles H. Peck and the late Dr Thomas C. Porter. They have, by their correspondence extending over several years, aided and encouraged the writer in the study of the plants of this region.

PTERIDOPHYTA

Ferns and fern-allies

OPHIOGLOSSACEAE

Botrychium obliquum Muhl.

B. ternatum var. *obliquum* D. C. Eaton

Oblique grape fern

On knolls in old clearings and pastures. Frequent. September.

Botrychium dissectum Spreng.

B. ternatum var. *dissectum* D. C. Eaton

Cut-leaved grape fern

Damp pastures. Barton. Rare. September.

Botrychium virginianum (L.) Sw.

Rattlesnake fern

Rich moist woods. Common. August.

OSMUNDACEAE

Osmunda regalis L.*Royal fern*

Swamps and wet woodlands. Frequent. June-July.

Osmunda cinnamomea L.*Cinnamon fern*

Low woods, thickets and swamps. Common. May-July.

Osmunda claytoniana L.*Clayton's fern*

Fields and woodlands. Common. May-June.

POLYPODIACEAE

Onoclea sensibilis L.*Sensitive fern*

Wet places. Common. August.

Matteuccia struthiopteris (L.) Todaro*Onoclea struthiopteris* Hoffm.*Ostrich fern*

Along streams in alluvial soil. Common. August.

Dennstaedtia punctilobula (Michx.) Bernh.*Dicksonia pilosiuscula* Willd.*Hay-scented fern*

Open woods and thickets. Common. August.

Cystopteris bulbifera (L.) Bernh.*Bulblet-bearing fern*

Rocky woodlands. Rare. Near Campville. July-August.

Cystopteris fragilis (L.) Bernh.*Brittle fern*

In wet, shaded soil and on cliffs. Common. May-July.

Dryopteris acrostichoides (Michx.) Kuntze*Aspidium acrostichoides* Sw.*Christmas fern*

Woods, specially under evergreens. Common. August.

Dryopteris noveboracensis (L.) Gray*Aspidium noveboracense* Sw.*New York fern*

Moist woods. Common. August.

Dryopteris thelypteris (L.) Gray
Aspidium thelypteris Sw.

Marsh shield fern

Swamps and low grounds. Common. Summer.

Dryopteris cristata (L.) Gray
Aspidium cristatum Sw.

Crested shield fern

Swamps. Common. July-August.

Dryopteris cristata clintoniana (D. C. Eaton) Underw.
Aspidium cristatum clintonianum (D. C. Eaton)
Underw.

Wet woods. Rare. August.

Dryopteris marginalis (L.) Gray
Aspidium marginale Sw.

Marginal shield fern

Rocky banks in deep shade. Common. July-August.

Dryopteris spinulosa (Retz) Kuntze
Aspidium spinulosum (Sw.) Kuntze

Spinulose shield fern

Wet woods and swamps. Infrequent.

Dryopteris spinulosa intermedia (Muhl.) Underw.
Aspidium spinulosum var. *intermedium* D. C. Eaton
In woods wet or dry. Common. August-September.

Dryopteris boottii (Tuckerm.) Underw.
Aspidium boottii Tuckerm.

Boott's shield fern

Swamps. Rare. Barton. July-September.

Phegopteris phegopteris (L.) Underw.
P. polypodioides Fee

Long beech fern

Rich woods. Frequent. August.

Phegopteris hexagonoptera (Michx.) Fee
Broad beech fern

Rich woods. Frequent. August.

Phegopteris dryopteris (L.) Fee*Oak fern*

Rich moist woods. Common. The three species of *Phegopteris* are frequently seen growing together. August.

Woodwardia virginica (L.) J. E. Smith*Virginia chain fern*

Bogs north of Barton. Rare. July.

Camptosorus rhizophyllus (L.) Link*Walking fern*

Found sparingly on a few rocks west of Barton. August-October.

Asplenium trichomanes L.*Maidenhair spleenwort*

Rocky walls of deep ravines and on stony banks. Common. July-September.

Asplenium platyneuron (L.) Oakes*A. ebenum Ait.**Ebony spleenwort*

On rocks and banks. Infrequent. July-September.

Asplenium acrostichoides Sw.*A. thelypteroides Michx.**Silvery spleenwort*

Rich moist woods. Infrequent. August-October.

Asplenium filix-foemina (L.) Bernh.*Lady fern*

In woods, thickets and by walls and fences. Common. The fronds are quite variable. July-August.

Adiantum pedatum L.*Maidenhair fern*

Abundant in moist woodlands. July-September.

Pteris aquilina L.*Brake. Bracken.*

On shrubby hillsides, borders of fields and roads and in open woods. Common. July-September.

Polypodium vulgare L.*Common polypody*

On rocks and rocky banks. Common. Found occasionally in swamps on trunks of trees. June-October.

EQUISETACEAE

Equisetum arvense L.*Field horsetail*

Along railways and roadsides. Common. May.

Equisetum sylvaticum L.*Wood horsetail*

Moist woods. Common. May.

Equisetum fluviatile L.*E. limosum L.**Swamp horsetail*

River shores. Common. May-June.

Equisetum hyemale L.*Scouring rush*

Wet places and on banks. Frequent. May-June.

LYCOPODIACEAE

Lycopodium lucidulum Michx.*Shining club moss*

In damp hemlock woods. Common. August-October.

Lycopodium obscurum L.*Ground pine*

Moist woods. Common. July-September.

Lycopodium annotinum L.*Stiff club moss*

In a thicket near Apalachin. Rare. September-November.

Lycopodium clavatum L.*Running pine. Club moss*

Found in thickets, open woods and along bushy roadsides. Common. August-October.

Lycopodium complanatum L.*Trailing Christmas green*

Thickets, open woods, specially in groves of young coniferous trees. Common. Autumn.

Lycopodium chamaecyparissus A. Br.

Found with the last and generally considered a variety of that species. Professor Underwood makes it a distinct species in his work, *Our Native Ferns*. Autumn.

ISOETACEAE

Isoetes engelmanni A. Br.*Engelmann's quillwort*

Frequent along the Susquehanna at Apalachin. August.

Isoetes engelmanni gracilis Engelm.

Found with the last. August.

SPERMATOPHYTA

Seed-bearing plants

PINACEAE

Pinus strobus L.*White pine*

Very common. Formerly this was the principal forest tree of this region, but now it occurs chiefly as a small tree, though, scattered here and there, specimens of primeval trees are still found.

Pinus resinosa Ait.*Red pine. Canadian pine*

Very rare. A single specimen was observed near Barton in 1897. According to old settlers it was formerly quite frequent. June.

Pinus rigida Mill.*Pitch pine*

Common. A much smaller tree than the white pine and less valuable. May.

Tsuga canadensis (L.) Carr.*Hemlock*

Common. The young trees are the most graceful of evergreens. May.

Taxus minor (Michx.) Britton**T. canadensis Willd.***Ground hemlock. American yew*

Moist, shaded banks and along streams. Frequent. Abundant near Apalachin and at the Delaware, Lackawanna and Western narrows west of Owego. Sometimes mistaken for a juniper. May.

TYPHACEAE

Typha latifolia L.

Broad-leaved cattail

Swamps. Abundant. June.

SPARGANIACEAE

Sparganium eurycarpum Engelm.

Broad-fruited bur reed

Marshes and borders of streams. Common. May-August.

Sparganium simplex Huds.

Simple-stemmed bur reed

The same situations as the last, but less frequent. June-August.

NAIADACEAE

Potamogeton natans L.

Common floating pondweed

Ponds and slow streams. Common. July-August.

Potamogeton nuttallii Cham. & Sch.

P. pennsylvanicus Cham.

Nuttall's pondweed

Ponds and streams. Common. July-August.

Potamogeton lonchites Tuckerm.

P. fluitans Roth

Long-leaved pondweed

In the river. Frequent. July-October.

Potamogeton perfoliatus L.

Clasping-leaved pondweed

In the river. Frequent. July-September.

Potamogeton crispus L.

Curled-leaved pondweed

In the river. Infrequent. August.

Potamogeton zosteræfolius Schum.

Eelgrass pondweed

In the river. Frequent. July-August.

Potamogeton pectinatus L.

Fennel-leaved pondweed

In the river. Common. July-August.

Zannichellia palustris L.**Zannichellia**

The Susquehanna river. Infrequent. July-September.

Najas flexilis (Willd.) Rost. & Schmidt.*Slender naia*s

Frequent in the river. Summer.

ALISMACEAE

Alisma plantago-aquatica L.*Water plantain*

Swamps, low grounds and along streams. Common. Summer.

Sagittaria latifolia Willd.**S. variabilis Engelm.***Broad-leaved arrowhead*

In wet ground or shallow water. Common. Summer.

Sagittaria rigida Pursh**S. heterophylla Pursh***Sessile-fruited arrowhead*

Along the border of the river. Frequent. Generally found in shallow water. July-September.

Sagittaria graminea Michx.*Grass-leaved arrowhead*

Shallow water along the Susquehanna. Frequent. Abundant at Apalachin. July-September.

VALLISNERIACEAE

Philotria canadensis (Michx.) Britton**Elodea canadensis Michx.***Ditch moss*

Ponds and streams. Common. May-August.

Vallisneria spiralis L.*Elgrass*

Common in the river. Summer.

GRAMINEAE

Andropogon scoparius Michx.*Little blue stem. Broom beard grass*

Dry banks along the river. Common. August-September.

Andropogon furcatus Muhl.

Big blue stem. Forked bearded grass

Dry banks along the river. Common. This grass has a very wide range east of the Rocky mountains. It is very abundant in the Missouri region, and is highly prized for hay. August-September.

Chrysopogon avenaceus (Michx.) Benth.

Indian grass

Found with the two preceding species but less common. A grass of wide distribution and specially abundant in South Dakota, where it is highly valued as a hay-producing species. August-September.

Snytherisma sanguinalis (L.) Nash

Panicum sanguinale L.

Large crab grass

Cultivated ground. Common. A grass of no agricultural value in the north, but in the south it is frequently cut for hay. July-August.

Snytherisma linearis (Krock.) Nash

Panicum glabrum Gaud.

Small crab grass

Cultivated fields. Common. July-September.

Panicum crus-galli L.

Barnyard grass

Cultivated soil and along streams. Common. A coarse, succulent grass and valuable forage plant for the silo. Autumn.

Panicum agrostidiforme Lam.

P. agrostoides Muhl.

Agrostis-like panicum

Wet, gravelly shores along the river. Frequent. July-September.

Panicum porterianum Nash

P. latifolium L.

Porter's panicum

Open woods and thickets. Frequent. June-July.

Panicum commutatum Schultes*Variable panicum*

Dry bank. Apalachin. Rare. June-July.

Panicum macrocarpon Le Conte*Large-fruited panicum*

Open woods and thickets. Common. July.

Panicum clandestinum L.*Hispid panicum*

On the banks of the river and along streams. Common. June-July.

Panicum xanthophysum Gray*Slender panicum*

Dry bank 2 miles east of Campville. Rare. June-July.

Panicum dichotomum L.*Forked panicum*

Thickets both dry and wet. Common. June-July.

Panicum pubescens Lam.*Hairy panicum*

Fields and thickets. Abundant. June-August.

Panicum depauperatum Muhl.*Starved panicum*

Dry banks. Frequent. June-September.

Panicum linearifolium Scribn.*Linear-leaved panicum*

Dry banks. Common. This species is more plentiful than the last, which it closely resembles. June-August.

Panicum virgatum L.*Tall smooth panicum. Switch grass*

Along the river. Common. August-September.

Panicum miliaceum L.*Millet*

A cultivated grass which frequently escapes. July.

Panicum proliferum Lam.*Spreading panicum*

River shore. Frequent. Abundant in some places. August.

Panicum capillare L.*Witch grass*

Cultivated grounds, woods, fields and along streams. Common.
Summer.

Ixophorus viridis (L.) Nash

Setaria viridis Beauv.

Green foxtail

Cultivated fields. Common. July-September.

Ixophorus glaucus (L.) Nash

Setaria glauca Beauv.

Yellow foxtail. Pigeon grass

Fields and roadsides. Common. July-September.

Ixophorus italicus (L.) Nash

Setaria italica Kunth

Italian millet. Hungarian grass

Waste places. Infrequent. This species together with
I. germanicus is found in cultivation throughout. August.

Homalocenchrus virginicus (Willd.) Britton

Leersia virginica Willd.

White grass

Damp, shaded places. Common. August-September.

Homalocenchrus oryzoides (L.) Poll.

Leersia oryzoides Sw.

Rice cut grass

Marshes and wet places along streams. Common. August-September.

Phalaris arundinacea L.

Reed canary grass

Borders of ponds and streams. Infrequent. July-August.

Phalaris canariensis L.

Canary grass

Waste places. Infrequent. Does not persist long. August.

Anthoxanthum odoratum L.

Sweet vernal grass

Roadsides and pastures. Frequent. June-July.

Aristida dichotoma Michx.

Poverty grass

In poor, thin soil at Apalachin. September.

Oryzopsis asperifolia Michx.

White-grained mountain rice

Upland woods. Frequent. May.

Oryzopsis melanocarpa Muhl.

Black mountain rice

Rocky hillsides in woods west of Barton. Plentiful. August.

Milium effusum L.

Wild millet

Damp woods. Infrequent. June-July.

Muhlenbergia mexicana (L.) Trin.

Mexican drop seed

Low grounds. Common. August-September.

Muhlenbergia racemosa (Michx.) B. S. P.

M. glomerata Trin.

Marsh muhlenbergia

Dry, stony bank at Apalachin. Apparently not found in our swamps. September.

Muhlenbergia sylvatica Torr.

Woodland drop seed

Banks of the river and along streams. Common. September.

Muhlenbergia tenuiflora (Willd.) B. S. P.

M. willdenovii Trin.

Slender-flowered drop seed

Dry thicket near Apalachin. Plentiful. August-September.

Muhlenbergia diffusa Schreb.

Nimble will

Woods and roadsides. Frequent. Found also in shady lawns. September.

Brachyelytrum erectum (Schreb.) Beauv.

B. aristatum R. & S.

Brachyelytrum

Moist woods. Common. July-August.

Phleum pratense L.*Timothy. Herd's grass*

Fields and waysides. Abundant.

Alopecurus geniculatus L.**A. geniculatus var. aristulatus Torr.***Marsh foxtail*

Marshland swamp and along streams at Apalachin. Frequent. This grass is said to make a beautiful lawn, remaining green throughout the winter. July-August.

Alopecurus pratensis L.*Meadow foxtail*

Meadow lands at Apalachin. Infrequent. An excellent pasture grass. June-July.

Sporobolus vaginaeflorus (Torr.) Wood*Sheathed rush grass*

Roadside in poor soil. Common. September.

Cinna arundinacea L.*Wood reed grass*

Borders of ponds and streams. Common. Found also in swamps. August-September.

Cinna latifolia (Trev.) Griseb.**C. pendula Trin.***Slender wood reed grass*

Damp woods and borders of ponds and streams. Frequent. August-September.

Agrostis alba L.*Redtop*

Grass lands. Common. July-August.

Agrostis vulgaris With.*Redtop. Herd's grass*

Meadows, fields and pastures. Common. July-August.

Agrostis stolonifera L.*Creeping bent grass*

Damp shores and pasture lands. Frequent. This and the preceding one are regarded by some as only varieties of *Agrostis alba*. July-August.

Agrostis perennans (Walt.) Tuckerm.*Thin grass*

Shaded places. Common. July-August.

Agrostis hyemalis (Walt.) B. S. P.*A. scabra* Willd.*Rough hair grass*

Damp shaded places. Common. July-August.

Calamagrostis canadensis (Michx.) Beauv.*Blue joint grass*River banks. Common. Found at Apalachin on a hilltop.
August.**Calamagrostis cinnoides** (Muhl.) Scribn.*C. nuttalliana* Steud.*Nuttall's reed grass*

Two miles east of Campville. Rare. August.

Holcus lanatus L.*Velvet grass. Meadow soft grass*

Meadows and pasture lands. Frequent. June-August.

Deschampsia caespitosa (L.) Beauv.*Tufted hair grass*

River shore. Infrequent. Near Campville. August.

Deschampsia flexuosa (L.) Trin.*Wavy hair grass*

River bank at Apalachin. Infrequent. July-August.

Avena striata Michx.*Purple oat*

Damp woods. Infrequent. Woods at Mutton hill pond. July.

Arrhenatherum elatius (L.) Beauv.*Oat grass*Meadows and pastures at Apalachin. Frequent. Cultivated
for hay. June-August.**Danthonia spicata** (L.) Beauv.*Wild oat grass*Dry, sterile soil. Common. A form of this grass with the
leaves and lower sheaths clothed with long, soft hairs is frequent
in dry thickets. July-August.

Danthonia compressa Austin*Flattened wild oat grass*

Woods and shaded places. Frequent. August.

Spartina cynosuroides (L.) Willd.*Fresh-water cord grass*

River shores. Infrequent. August-September.

Eragrostis capillaris (L.) Nees*Capillary eragrostis*

Dry banks and meadows. Frequent. Campville flats.

Eragrostis frankii Steud.*Frank's eragrostis*

River shores. Infrequent. Abundant in an old gravel pit near Apalachin. September.

Eragrostis pilosa (L.) Beauv.*Tufted eragrostis*

Roadsides in poor soil. Common. August.

Eragrostis purshii Schrad.*Pursh's eragrostis*

Plentiful at a sand bank at Apalachin and along roadsides. August-September.

Eragrostis pectinacea (Michx.) Steud.*Purple eragrostis*

Meadows at Apalachin. Rare. A beautiful species. August.

Eragrostis hypnoides (Lam.) B. S. P.*E. reptans* Nees*Creeping eragrostis*

Along the river and in wet places. Common. August.

Eatonia pennsylvanica (DC.) Gray*Eaton's grass*

Moist thickets and swamps. Frequent. July.

Eatonia nitida (Spreng.) Nash*E. dudleyi* Vasey.*Slender eatonia*

Frequent on wooded banks at Apalachin. May-June.

Koeleria cristata (L.) Pers.*Koeleria*

Dry bank near Campville. Infrequent. A western species which reaches its eastern limit with us. August.

Dactylis glomerata L.*Orchard grass*

Grass lands. Common. June-July.

Cynosurus cristatus L.*Dog-tail grass*

Plentiful in a pasture at Campville. Adventive from Europe. July.

Poa annua L.*Low spear grass*

Dooryards, lawns and waste places. Common. May-October.

Poa compressa L.*English blue grass. Wire grass*

Meadows and other grass lands. Common. A slender form is found in woods. June-July.

Poa pratensis L.*Kentucky blue grass. June grass*

In all meadows and pastures. The most common of our grasses. June-July.

Poa trivialis L.*Roughish meadow grass*

Plentiful in swamps and wet places at Apalachin. July.

Poa flava L.**P. serotina Ehrh.***False redtop. Fowl meadow grass*

Low meadows and along streams. Common. July-August.

Poa debilis Torr.*Weak spear grass*

Woods and thickets. Frequent. May-June.

Poa alsodes Gray*Grove meadow grass*

Wet woods. Infrequent. May-June.

Panicularia laxa Scribn.*Northern manna grass*

Swamps at Apalachin. Infrequent. August.

Panicularia canadensis (Michx.) Kuntze*Glyceria canadensis* Trin.*Rattlesnake grass*

Swamps. Common. July-August.

Panicularia nervata (Willd.) Kuntze*Glyceria nervata* Trin.*Nerved manna grass*

Swamps, woods and damp places. Common. June-September.

Panicularia americana (Torr.) MacM.*Glyceria grandis* Wats.*Tall manna grass*

Swamps and along streams. Frequent. July-August.

Panicularia pallida (Torr.) Kuntze*Glyceria pallida* Trin.*Pale manna grass*Marshland swamp and swamp east of Campville. Frequent.
July-August.**Panicularia fluitans** (L.) Kuntze*Glyceria fluitans* R. Br.*Floating manna grass*Marshland swamp and swamp east of Campville. Frequent
July-August.**Panicularia borealis** Nash*Northern manna grass*Marshland swamp. Frequent. Apparently a slender form of
the preceding species. July-August.**Panicularia acutiflora** (Torr.) Kuntze*Glyceria acutiflora* Torr.*Sharp-scaled manna grass*Marshland swamp and swamp east of Campville. Infrequent.
June-August.**Festuca ovina** L.*Sheep's fescue*

Plentiful in pastures and at Campville. June.

Festuca ovina duriuscula (L.) Hack.*Hard fescue*

Banks of the river. Frequent. July.

Festuca elatior L.*Tall fescue*

Grass lands. Common. A valuable grass either for mowing or for pasture. July-August.

Festuca nutans Willd.*Nodding fescue*

Damp woods. Frequent. July.

Bromus ciliatus L.*Wood chess*

Low woods and banks of streams. Common. July-August.

Bromus pubescens Muhl.**B. ciliatus purgans (L.) Gray***Soft chess*

Thicket near Apalachin. July. Distinct from the last both in appearance and habitat.

Bromus kalmii Gray*Kalm's chess*

In rocky woods. Frequent. July-August.

Bromus secalinus L.*Cheat. Chess*

Frequent in wheat fields. June-August.

Bromus racemosus L.*Upright chess*

In fields and along railways. Frequent. July-August.

Lolium perenne L.*Rye grass*

Pasture land at Campville. Frequent. July.

Lolium italicum A. Br.*Italian rye grass*

Meadow lands at the Marshland farm. Frequent. A much coarser grass than the last. July.

Agropyron repens (L.) Beauv.*Quack grass*

Grass lands, specially around barns and dwellings. Common.
July-September.

Agropyron caninum (L.) R. & S.*Awned wheat grass*

Open woods and thickets and along their borders. Frequent.
July.

Hordeum jubatum L.*Squirrel tail grass*

Along the Delaware, Lackawanna and Western Railroad and
in gardens, as a weed, at Apalachin. Infrequent. July.

Elymus striatus Willd.*Slender wild rye*

River banks in shade. Common. June.

Elymus virginicus L.*Terrell grass*

River banks. Common. July-August.

Elymus canadensis L.*Nodding wild rye*

River banks. Abundant. July-August.

Elymus canadensis glaucifolius (Willd.) Torr.*Glaucous wild rye*

With the preceding species and evidently only a glaucous form
of it. July-August.

Hystrix hystrix (L.) Millsp.**Asprella hystrix Willd.***Bottle brush grass*

In rocky woods and along streams. Frequent. Spikelets
easily detached. July.

CYPERACEAE

Cyperus diandrus Torr.*Low cyperus*

Along streams in wet soil. Frequent. August-September.

Cyperus rivularis Kunth*Shining cyperus*

In wet soil, specially along Apalachin creek. Frequent.
August-September.

Cyperus inflexus Muhl.**C. aristatus** Rottb.*Awned cyperus*

In wet soil along the river shores. Infrequent. August.

Cyperus esculentus L.*Yellow nut grass*

Along streams and in damp fields. Common. In some places
a troublesome weed. August-October.

Cyperus strigosus L.*Straw-colored cyperus*

In moist meadows or along streams. Common. A species pre-
sented numerous forms. August-October.

Dulichium arundinaceum (L.) Britton.**D. spathaceum** Pers.*Dulichium*

Swamps. Very common. August-October.

Eleocharis ovata (Roth) R. & S.*Ovoid spike rush*

Swamps and in all wet soil. Common. July-September.

Eleocharis acicularis (L.) R. & S.*Needle spike rush*

In wet soil. Common. July-September.

Stenophyllus capillaris (L.) Britton**Fimbristylis capillaris** Gray*Hairlike stenophyllus*

Campville river flats. Frequent. August.

Scirpus planifolius Muhl.*Wood club rush*

In dry woods and thickets. Frequent. May-June.

Scirpus americanus Pers.*S. pungens Vahl**Chair-maker's rush*

On the river shores. Frequent. Abundant at Apalachin.
August.

Scirpus torreyi Olney*Torrey's bulrush*

Plentiful at Mutton hill pond in the outlet. August.

Scirpus lacustris L.*Great bulrush. May rush*

In shallow water along the river. Common. August.

Scirpus atrovirens Muhl.*Dark green bulrush*

Swamps and wet places. Common. July.

Scirpus polyphyllus Vahl*Leafy bulrush*

Wet woods and along streams. Frequent. August.

Scirpus cyperinus (L.) Kunth**Eriophorum cyperinum L.***Wool grass*

In all swamps and other wet places. Abundant. August-September.

Scirpus cyperinus eriophorum (Michx.) Britton**Eriophorum cyperinum var. laxum Gray**

With the type. Common. Spikelets mostly peduncled.
August-September.

Eriophorum polystachyon L.*Tall cotton grass*

Mutton hill pond. Rare. June-August.

Eriophorum virginicum L.*Virginia cotton grass*

Common in bogs. A form is found at Barton, which approaches the var. *album* Gray. July-September.

Rynchospora alba (L.) Vahl*White beaked rush*

On bogs at Mutton hill pond. Common. July.

Carex intumescens Rudge*Bladder sedge*

In wet woods, bogs and swamps. Common. June-July.

Carex asa-grayi Bailey**C. grayi** Carey*Gray's sedge*

Plentiful in a small swamp at Barton. July.

Carex lupulina Muhl.*Hop sedge*

Swamps. Common. July.

Carex lupulina bella-villa (Dewey) Bailey

Swamp east of Campville. Infrequent. July.

Carex utriculata Boott*Bottle sedge*

Abundant at the Marshland swamp. June-July.

Carex monile Tuckerm.*Necklace sedge*

Swamps. Common. July.

Carex tuckermani Dewey*Tuckerman's sedge*

In swamps, bogs and wet meadows. Common. June-July.

Carex retrorsa Schwein.*Retrorse sedge*

Swamps. Infrequent. June-July.

Carex lurida Wahl.*Sallow sedge*

Swamps and low grounds. Abundant. June-July.

Carex baileyi Britton**C. lurida** var. *gracilis* Bailey*Bailey's sedge*

Swamp near Campville. Infrequent. July.

Carex hystericina Muhl.*Porcupine sedge*

Swamps. Infrequent. June-July.

Carex pseudo-cyperus L.*Cyperuslike sedge*

Swamp east of Campville. Rare. July-August.

Carex comosa Boott**C. pseudo-cyperus var. americana Hochst.***Bristly sedge*

Swamps. Common. July-August.

Carex trichocarpa Muhl.*Hairy-fruited sedge*Along the river banks. Abundant. Found also in swamps.
June-July.**Carex riparia Curtis***River bank sedge*

Abundant at the Marshland swamp. June.

Carex scabrata Schwein.*Rough sedge*

In wet, shaded places. Common. June-July.

Carex lanuginosa Michx.**C. filiformis var. latifolia Boeckl.***Woolly sedge*

Mutton hill pond. Infrequent. June.

Carex filiformis L.*Slender sedge*

Frequent in all swamps in the vicinity of Apalachin. June-July.

Carex stricta Lam.*Tussock sedge*

Along the river and on the edges of swamps. Common. May-June.

Carex torta Boott*Twisted sedge*

On banks of streams. Frequent. June.

Carex prasina Wahl.*Drooping sedge*

Plentiful at Mutton hill pond. May-July.

Carex crinita Lam.*Fringed sedge*

Swamps, wet places and ditches. Frequent. June-July.

Carex gynandra Schwein.*Nodding sedge*

Found in the same situations as *C. crinita*, but much more common. June-July.

Carex virescens Muhl.*Downy green sedge*

In grassy places. Infrequent. June.

Carex triceps Michx.

C. triceps var. *hirsuta* Bailey

Hirsute sedge

On dry knolls. Frequent. June.

Carex gracillima Schwein.*Graceful sedge*

In moist woodlands. Common. June.

Carex longirostis Torr.*Long-beaked sedge*

Plentiful in thickets along the river banks at Barton. May-June.

Carex arctata Boott*Drooping wood sedge*

In open woods. Infrequent. May-June.

Carex tenuis Rudge

C. debilis var. *rudgei* Bailey

Slender-stalked sedge

Low woods. Common. June-July.

Carex grisea Wahl.*Gray sedge*

In shaded places. Common. June.

Carex amphibola Steud.*Narrow-leaved sedge*

River bank at Apalachin. Infrequent. Verified by Dr Thomas C. Porter. June.

Carex granularis Muhl.*Meadow sedge*

Moist ground in meadows. Infrequent. June.

Carex pallescens L.*Pale sedge*

In fields and along roadsides at Apalachin. June.

Carex laxiflora Lam.*Loose-flowered sedge*

Woods, ravines and open places. Common. May-June.

Carex laxiflora blanda (Dewey) Boott

Woods and fields. Frequent. May-June.

Carex laxiflora varians Bailey

Found with the type. Frequent. May-June.

Carex laxiflora patulifolia (Dewey) Carey

In ravines and damp shades. Common. May-June.

Carex styloflexa Buckley*C. laxiflora* var. *styloflexa* Boott*Bent sedge*

Damp soil at Barton. Rare. June.

Carex digitalis Willd.*Slender wood sedge*

Open woods and thickets. Infrequent. June.

Carex albursina Sheldon*C. laxiflora* var. *latifolia* Boott*White bear sedge*

Rich, moist soil in woods, specially in shaded ravines. Frequent. June.

Carex plantaginea Lam.*Plantain-leaved sedge*

Shaded banks and open woods. Infrequent. Near Owego. May-June.

Carex laxiculmis Schwein.*Spreading sedge*

In woods and coppices. Frequent. June.

Carex pedunculata Muhl.

Long-stalked sedge

Plentiful in a damp thicket at Barton. May-June.

Carex pedicellata (Dewey) Britton .

C. communis Bailey

Fibrous-rooted sedge

Dry banks in open thickets. Common. May-June.

Carex pennsylvanica Lam.

Pennsylvania sedge

Dry soil in woods, thickets and open places. Very common.
May-June.

Carex varia Muhl.

Emmons sedge

On hilltops in either dry or damp woods at Apalachin. Infrequent. May-June.

Carex pubescens Muhl.

Pubescent sedge

Open woods at Barton. Infrequent. June.

Carex leptalea Muhl.

C. polytrichoides Muhl.

Bristle-stalked sedge

Swamps. Common. June.

Carex stipata Muhl.

Awl-fruited sedge

Swampy fields. Very common. June.

Carex vulpinoidea Michx.

Fox sedge

Swamps, ditches and fields. Very common. June.

Carex xanthocarpa Bicknell

Yellow-fruited sedge

In dry fields at Apalachin. Common. Easily distinguished from *C. vulpinoidea* by its bright yellow, plano-convex perigynia. June.

Carex tenella Schk.*Soft-leaved sedge*

Swamp north of Campville. June.

Carex rosea Schk.*Stellate sedge*

Woods and open places. Common. June.

Carex rosea radiata Dewey

With the type. June.

Carex retroflexa Muhl.**C. rosea** var. **retroflexa** Torr.*Reflexed sedge*

Rich woods. Infrequent. June.

Carex muricata L.*Lesser prickly sedge*

Dry bank at Apalachin. Introduced from Europe. June.

Carex sparganioides Muhl.*Bur reed sedge*

Shaded places, wet or dry. Common. June-July.

Carex cephaloidea Dewey*Thin-leaved sedge*

Moist places in woods and fields. Frequent. June-July.

Carex cephalophora Muhl.*Oval-headed sedge*

Dry knolls and open woodland. Common. June.

Carex muhlenbergii Schk.*Muhlenberg's sedge*

Dry bank at Apalachin. Rare. June.

Carex sterilis Willd.**C. echinata** var. **microstachys** Boeckl.*Little prickly sedge*

Bogs. Mutton hill pond. Frequent. May-June.

Carex sterilis cephalantha Bailey**C. echinata** var. **cephalantha** Bailey

With the type at Mutton hill pond. May-June.

Carex, canescens L.*Silvery sedge*

Plentiful at Mutton hill pond. May-June.

Carex trisperma Dewey*Three-fruited sedge*

Swamps near Barton and Campville. June-August.

Carex deweyana Schwein.*Dewey's sedge*

Dry, open woods. Common. June.

Carex bromoides Schk.*Broomlike sedge*

Shaded swamps and wet woodlands. Common. June.

Carex tribuloides Wahl.*Blunt broom sedge*

Low moist ground, swamps and swales. Common. July.

Carex tribuloides bebbii Bailey

Wet places. Occasional. July.

Carex scoparia Schk.*Pointed broom sedge*

Common in open fields and ditches. July.

Carex scoparia minor Boott

Dry woods. Barton. June.

Carex cristatella Britton

C. tribuloides var. cristata Bailey

Crested sedge

Plentiful in fields at Apalachin. July-September.

Carex foenea Willd.*Hay sedge*

Dry banks at Apalachin. Rare. June-July.

Carex straminea Willd.*Straw sedge*

Coppices and open fields. Frequent. June-July.

Carex festucacea Willd.**C. straminea** var. **brevior** Dewey*Fescue sedge*

In a dry thicket on a hilltop near Apalachin. Rare. June.

ARACEAE

Arisaema triphyllum (L.) Torr.*Indian turnip. Jack-in-the-pulpit*

Rich moist woodlands and ravines. Common. The corm, when fresh, is very acrid. June.

Arisaema dracontium (L.) Schott*Green dragon*

Shaded alluvial soil along the river. Frequent. June.

Calla palustris L.*Water arum. Wild calla*

Swamps. Common. Generally found growing in water. May-June.

Spathyema foetida (L.) Raf.**Symplocarpus foetidus** Nutt.*Skunk cabbage*

Alluvial soil along the river and its branches. Common. March-April.

Acorus calamus L.*Sweet flag*

Wet places, specially near dwellings. Frequent. June.

LEMNACEAE

Spirodela polyrhiza (L.) Schleid.*Great duckweed*

Stagnant pools and water holes. Common. Summer.

Lemna minor L.*Small duckweed*

With the last but less common. Summer.

PONTEDERIACEAE

Heteranthera dubia (Jacq.) MacM.**H. graminea** Vahl*Water star grass*

In shallow water along the river. Common. August.

JUNCACEAE

Juncus effusus L.*Soft rush*

Wet places. Common. Summer.

Juncus bufonius L.*Toad rush*

Roadsides. Common. Summer.

Juncus tenuis Willd.*Yard rush*

Along paths and waysides. Common. Summer.

Juncus nodosus L.*Knotted rush*

River shores and damp places. Common. Summer.

Juncus canadensis J. Gay**J. canadensis var. longicaudatus Engelm.***Canada rush*

Wet places. Mutton hill pond and Marshland swamp. Summer.

Juncus canadensis brevicaudatus Engelm.**J. canadensis var. coarctatus Engelm.***Narrow-panicled rush***Juncus acuminatus Michx.***Sharp-fruited rush*

Marshes and ditches. Common. Summer.

Juncoides pilosum (L.) Kuntze**Luzula vernalis DC.***Hairy wood rush*

Damp woods and bushy places. Common. May.

Juncoides campestre (L.) Kuntze**Luzula campestris DC.***Common wood rush*

Dry soil in pastures and clearings. Common. April-May.

MELANTHACEAE

Chamaelirium luteum (L.) Gray**C. carolinianum** Willd.*Blazing star*

Woods and thickets, wet or dry. Frequent. June.

Veratrum viride Ait.*Hellebore. Indian poke*

Alluvial soil along the river and other streams. Common. June.

Uvularia perfoliata L.*Perfoliate bellwort*

Rich woods and coppices. Common. May.

Uvularia grandiflora J. E. Smith*Large-flowered bellwort*

Woods and thickets. Frequent. Plentiful at Barton. May.

Uvularia sessilifolia L.**Oakesia sessilifolia** Wats.*Sessile-leaved bellwort*

Low woods and ravines. Common. May.

LILIACEAE

Hemerocallis fulva L.*Day lily*

Escaped from cultivation and established by roadsides. June-August.

Allium tricoccum Ait.*Wild leek*

Alluvial soil along the river. Common. July.

Allium cernuum Roth*Nodding wild onion*

High banks of the river and rocky places. Frequent. Barton. July.

Allium canadense L.*Meadow garlic*

Thickets along the river. Frequent. May.

Lilium philadelphicum L.*Wood lily*

Dry woods and thickets. Frequent. June.

Lilium canadense L.*Canada lily*

River banks. Frequent. June-July.

Lilium superbum L.*Turk's cap lily*

River banks. Abundant at Apalachin. July-August.

Erythronium americanum Ker*Yellow adder's-tongue*

Damp woods and pastures, specially along streams. Common.
April-May.

Ornithogalum umbellatum L.*Star of Bethlehem*

Escapes from cultivation. Occasional. May.

Muscari botryoides (L.) Mill.

Occasionally escapes from cultivation. Roadside at Owego.
April.

CONVALLARIACEAE

Asparagus officinalis L.*Asparagus*

Fields and roadsides. Infrequent. May-October.

Clintonia borealis (Ait.) Raf.*Yellow clintonia*

Cool, damp woods. Frequent. May-June.

Vagnera racemosa (L.) Morong**Smilacina racemosa Desf.***False Solomon's seal*

Woods, ravines and river banks. Common. May.

Unifolium canadense (Desf.) Greene**Maianthemum canadense Desf.***False lily of the valley*

Damp woods and thickets. Common. May-June.

Streptopus roseus Michx.*Sessile-leaved twisted stalk*

Cool, damp woods. May-June.

Polygonatum biflorum (Walt.) Ell.*Hairy Solomon's seal*

Woods, fence rows and river banks. Common. May.

Polygonatum commutatum (R. & S.) Dietr.**P. giganteum** Dietr.*Smooth Solomon's seal*

River banks. Common. June. The young shoots are used as a substitute for asparagus.

Medeola virginiana L.*Indian cucumber root*

Rich, moist woods. Common. May-June.

Trillium grandiflorum (Michx.) Salisb.*Large-flowered wake-robin*

Woods and river banks. Common. May.

Trillium erectum L.*Ill scented wake-robin*

Rich woods, ravines and river banks. Common. May.

Trillium undulatum Willd.**T. erythrocarpum** Michx.*Painted wake-robin*

Cool, damp woods. Infrequent. Apalachin. June.

SMILACEAE

Smilax herbacea L.*Carrion flower*

Woods, fence rows and banks of streams. Frequent. June.

Smilax hispida Muhl.*Hispid green brier*

Thickets. Frequent. June.

AMARYLLIDACEAE

Hypoxis hirsuta (L.) Coville**H. erecta** L.*Star grass*

Dry woods. Frequent. May-October.

DIOSCOREACEAE

Dioscorea villosa L.*Wild yam root*

Thickets along the river. Frequent. Apalachin. June-July.

IRIDACEAE

Iris versicolor L.*Larger blue flag*

Swamps and shores. Common. May-July.

Sisyrinchium graminoides Bickn.**S. anceps** Cav.*Stout blue-eyed grass*

Grassy places. Frequent. June.

Sisyrinchium angustifolium Mill.*Pointed blue-eyed grass*

Meadows and pastures. Common. May-August.

ORCHIDACEAE

Cypripedium acaule Ait.*Stemless lady's slipper*

Woods, specially on the site of decayed logs. Frequent. May-June.

Cypripedium hirsutum Mill.**C. pubescens** Willd.*Large yellow lady's slipper*

Wet woods and swamps. Infrequent. June.

Cypripedium parviflorum Salisb.*Small yellow lady's slipper*

Wet or dry woods. Common. June.

Orchis spectabilis L.*Showy orchis*

Damp woods. Tioga Center. Rare. May.

Habenaria orbiculata (Pursh) Torr.*Large round-leaved orchis*

Rich woods. Barton. Infrequent. July.

Habenaria hookeriana Gray*Hooker's orchis*

Damp woods. Barton. Infrequent. June.

Habenaria clavellata (Michx.) Spreng.*H. tridentata* Hook.*Small green wood orchis*

Swamps near Barton. Infrequent. August.

Habenaria lacera (Michx.) R. Br.*Ragged orchis*

Swamps. Apalachin. Frequent. July.

Habenaria psycodes (L.) Gray*Purple-fringed orchis*

Damp woods. Common. July-August.

Pogonia ophioglossoides (L.) Ker*Rose pogonia*

Mutton hill pond and bogs north of Barton. July.

Gyrostachys cernua (L.) Kuntze*Spiranthes cernua* Rich.*Nodding ladies' tresses*

Damp open places. Common. September.

Gyrostachys gracilis (Bigel.) Kuntze*Spiranthes gracilis* Bigel.*Slender ladies' tresses*Dry thickets and specially in pine groves. Infrequent.
Apalachin. August.**Peramium repens** (L.) Salisb.*Goodyera repens* R. Br.*Small rattlesnake plantain*

Evergreen woods. Infrequent. July-August.

Peramium repens ophioides Fern.

With the type but more frequent. July-August.

Peramium pubescens (Willd.) MacM.*Goodyera pubescens* R. Br.*Downy rattlesnake plantain*

Woods, usually under evergreens. Frequent. July-August.

Leptorchis loeselii (L.) MacM.

Liparis loeselii Richards.

Fen orchis

Damp places. Barton and Apalachin. Rare. June.

Corallorhiza odontorhiza (Willd.) Nutt.

Small-flowered coral root

Woods and thickets. Infrequent. August-September.

Corallorhiza multiflora Nutt.

Large coral root

Woods and thickets. Frequent. August.

Limodorum tuberosum L.

Calopogon pulchellus R. Br.

Grass pink. Calopogon

Bogs north of Barton. July.

JUGLANDACEA

Juglans nigra L.

Black walnut

Banks of the river and along streams. Frequent. April-May.

Juglans cinerea L.

Butternut. White walnut

Banks of the river and along streams. Common. April-May.

Hicoria minima (Marsh.) Britton

Carya amara Nutt.

Bitternut

Borders of fields. Frequent. May-June. Nut with a thin shell and very bitter kernel.

Hicoria ovata (Mill.) Britton

Carya alba Nutt.

Shagbark. Shellbark hickory

Woods, thickets and fields. Common. May. The principal hickory nut of the market. A form with very large compressed nuts occurs near Apalachin.

Hicoria alba (L.) Britton

Carya tomentosa Nutt.

Mockernut. White-heart hickory

Fields and woods. Not common. Nut thick shelled, seed sweet.

Hicoria microcarpa (Nutt.) Britton

Carya microcarpa Nutt.

Small-fruited hickory

Frequent in fields and along their borders. May-June. Nut small, kernel sweet.

Hicoria glabra (Nutt.) Britton

Carya porcina Nutt.

Pignut

Infrequent. May-June. Nut pointed, thick shelled, kernel somewhat astringent.

MYRICACEAE

Comptonia peregrina (L.) Coulter

Myrica asplenifolia L.

Sweet fern

Thin sterile soil. Common. April-May.

SALICACEAE

Populus alba L.

White poplar

An introduced shade tree, which spreads freely by means of suckers.

Populus balsamifera candicans (Ait.) Gray

Balm of Gilead

River banks. Abundant in some places. April.

Populus grandidentata Michx.

Large-toothed aspen

Hillsides. Common. April.

Populus tremuloides Michx.

American aspen

Woods and thickets. Common. April.

Populus dilatata L.

Lombardy poplar

An introduced tree, frequent near the sites of deserted dwellings.

Salix nigra Marsh.*Black willow*

Banks of the river, along streams and on the shores of ponds.
Common. May.

Salix lucida Muhl.*Shining willow*

Banks of streams. Frequent. May.

Salix fragilis L.*Crack willow. Brittle willow*

River banks. Barton. Infrequent. May.

Salix alba vitellina (L.) Koch*White willow*

Banks of streams. Common. May.

Salix fluviatilis Nutt.**S. longifolia Muhl.***Sandbar willow*

Low land along the river. Frequent. April-May.

Salix bebbiana Sarg.**S. rostrata Richards.***Beaked willow*

Swamps and wet places. Common. May.

Salix humilis Marsh.*Prairie willow*

Dry hills. Frequent. April.

Salix tristis Ait.*Dwarf gray willow*

Uplands. Frequent. March-April.

Salix discolor Muhl.*Pussy willow. Glaucous willow*

Wet soil. Common. March-April.

Salix sericea Marsh.*Silky willow*

Swamps. Common. May.

Salix cordata Muhl.*Heart-leaved willow*

Abundant along the river and other streams and in wet places.
April-May.

BETULACEAE

Carpinus caroliniana Walt.*Water beech*

Damp woods and along streams. Common. May.

Ostrya virginiana (Mill.) Willd.*O. virginica* Willd.*Ironwood*

Woods and thickets. Frequent. May.

Quercus rubra L.*Red oak*

Woods. Common. June.

Quercus coccinea Wang.*Scarlet oak*

Woods and thickets. Infrequent. May-June.

Quercus velutina Lam.*Q. coccinea* var. *tinctoria* Gray*Black oak*

Woods, thickets, fields and along fences. Common. May-June.

Quercus nana (Marsh.) Sarg.*Q. ilicifolia* Wang.*Scrub oak*

Hillsides. Common. May. Forming thickets near Campville.

Quercus alba L.*White oak*

Common. This species, *Q. rubra*, *Q. velutina*, *Q. prinus* and *Castanea dentata* constitute the principal forest trees of the region.

Quercus macrocarpa Michx.*Bur oak*

Common along the river at Barton. May-June.

Quercus platanoides (Lam.) Sudw.

Q. bicolor Willd.

Swamp white oak

Damp grounds. Apalachin. Rare, but formerly quite plentiful. May-June.

Quercus prinus L.

Rock oak

Upland woods. Common. May-June.

Quercus acuminata (Michx.) Sarg.

Q. muhlenbergii Engelm.

Chestnut oak. Yellow oak

Barton. Rare. May.

Quercus prinoides Willd.

Scrub chestnut oak

Hillsides. Frequent and even abundant in some places. May.

ULMACEAE

Ulmus americana L.

White elm. American elm

Low grounds. Common. April.

Ulmus racemosa Thomas

Rock elm

Woods and thickets. Frequent. March-April.

Ulmus fulva Michx.

Slippery elm

Along the river and creeks. Frequent. March-April.

Celtis occidentalis L.

Hackberry. Sugar tree

River banks. Scarce at Apalachin but more plentiful at Barton and in the western part of our range. April.

MORACEAE

Humulus lupulus L.

Hop

Abundant along the river banks. August.

Cannabis sativa L.

Hemp

Waste places. Occasional. August.

URTICACEAE

Urtica gracilis Ait.*Slender nettle*

Fence rows. Common. June-July.

Urticastrum divaricatum (L.) Kuntze**Laportea canadensis** Gaud.*Wood nettle*

Moist, shaded places. Common. July-August.

Adicea pumila (L.) Raf.**Pilea pumila** Gray*Richweed. Clearweed*

Damp, shady places. Common. July-September.

Boehmeria cylindrica (L.) Willd.*False nettle*

Wet soil. Common. July-September.

SANTALACEAE

Comandra umbellata (L.) Nutt.*Bastard toad flax*

Dry thickets. Common. May-July.

ARISTOLOCHIACEAE

Asarum canadense L.*Wild ginger*

Abundant in thickets along the river. May.

Asarum reflexum Bickn.*Short-lobed wild ginger*

Plentiful in a deep ravine near Campville. Closely resembling *A. canadense*, and by some regarded as a form of that species. May.

POLYGONACEAE

Rumex acetosella L.*Sheep sorrel. Field sorrel*

Everywhere common. Very abundant in newly seeded land. May-September.

Rumex verticillatus L.*Swamp dock*

Swamps. Common. May-July.

Rumex britannica L.*Great water dock*

Swamps. Frequent. July-August.

Rumex crispus L.*Curled dock*

Waste places. Common. June-August.

Rumex sanguineus L.*Red-veined dock*

Waste places. Infrequent. Apalachin. May-August.

Rumex obtusifolius L.*Bitter dock*

Gardens and fields. Common. June-August.

Fagopyrum fagopyrum (L.) Karst.**F. esculentum Moench***Buckwheat*

Frequently persists in fields. June-September.

Polygonum amphibium L.*Water persicaria*

In water and along muddy shores. Common. July-August.

Polygonum emersum (Michx.) Britton**P. muhlenbergii Wats.***Swamp persicaria*

Shores of the river. Common. July-September.

Polygonum pennsylvanicum L.*Pennsylvania persicaria*

In moist, rich soil. Common. July-October.

Polygonum persicaria L.*Lady's thumb*

Common everywhere. June-October.

Polygonum hydropiperoides Michx.*Mild water pepper*

Along the river at Apalachin. Abundant in one station. June-September.

Polygonum hydropiper L.*Smartweed*

Ditches and wet places. Common. July-September.

Polygonum punctatum Ell.*P. a c r e H. B. K.**Water smartweed*

Shores of the river. Frequent. June-October.

Polygonum virginianum L.*Virginia knotweed*

Damp thickets. Frequent. July-October.

Polygonum orientale L.*Prince's feather*

Waste places. Escaped from cultivation. Infrequent. August-September.

Polygonum aviculare L.*Doorweed. Knotgrass*

In dooryards and along footpaths. Common. June-November.

Polygonum erectum L.*Erect knotweed*

Roadsides. Common. July-September.

Polygonum convolvulus L.*Black bindweed*

Cultivated and waste grounds. Common. July-September.

Polygonum cilinode Michx.*Fringed black bindweed*

Infrequent. West of Owego. June-September.

Polygonum scandens L.*Climbing false buckwheat*

Banks of streams. Common. August-September.

Polygonum sagittatum L.*Arrow-leaved tear-thumb*

Swamps and low grounds. Common. July-September.

Polygonum arifolium L.*Halberd-leaved tear-thumb*

Marshes. Frequent. July-September.

CHENOPODIACEAE

Chenopodium album L.*Pigweed*

Cultivated and waste grounds. Abundant. June-September.

Chenopodium album viride (L.) Moq.

With the type. Frequent. June-September.

Chenopodium glaucum L.*Oak-leaved goosefoot*

Along the railroad at Apalachin. Infrequent. June-September.

Chenopodium hybridum L.*Maple-leaved goosefoot*

Waste places. Infrequent. July-September.

Chenopodium botrys L.*Jerusalem oak*

Waste places. Infrequent. Apalachin. July-September.

Atriplex hastata L.**A. patulum** var. **hastatum** Gray*Halberd-leaved orache*

Waste places. Infrequent. August-October.

AMARANTHACEAE

Amaranthus retroflexus L.*Rough pigweed*

Gardens and waste places. Common. August-October.

Amaranthus hybridus L.**A. hypochondriacus** L.*Slender pigweed*

Waste places. Infrequent. Barton. August-October.

Amaranthus hybridus paniculatus (L.) U. & B.**A. paniculatus** L.*Red amaranth*

Waste places. Infrequent. August-October.

Amaranthus blitoides Wats.*Prostrate amaranth*

Along railroads. Infrequent. Campville. June-October.

Amaranthus graecizans L.**A. albus L.***Tumbleweed*

In waste and cultivated places. Common. June-September.

PHYTOLACCACEAE

Phytolacca decandra L.*Poke. Pigeonberry. Garget*

Pastures and borders of woods, specially in newly cleared land. Frequent. July.

AIZOACEAE

Mollugo verticillata L.*Carpetweed*

Cultivated ground, where it often forms dense mats. Common. Summer.

PORTULACACEAE

Claytonia virginica L.*Spring beauty*

Moist woods and banks. Common. April-May.

Claytonia caroliniana Michx.*Carolina spring beauty*

Damp woods. Infrequent. April-May.

Portulaca oleracea L.*Purslane. Pussly*

Gardens and waste places. Common. Summer.

CARYOPHYLLACEAE

Agrostemma githago L.**Lychnis githago Scop.***Corn cockle*

Frequent in wheat fields. July. The seeds are said to be very poisonous.

Silene stellata (L.) Ait.*Starry campion*

Dry thickets. Common. June-July.

Silene vulgaris (Moench) Garcke**S. cucubalus Wibel***Bladder campion*

Waste places. Infrequent. Barton. Summer.

Silene antirrhina L.*Sleepy catchfly*

Along railroads and in waste places. Frequent. Summer.

Silene armeria L.*Sweet william*

Spontaneous in gardens. July.

Silene noctiflora L.*Night-flowering catchfly*

Waste places. Frequent. June-September.

Saponaria officinalis L.*Soapwort. Bouncing bet*

Roadsides and along streams. Common. Summer.

Vaccaria vaccaria (L.) Britton**Saponaria vaccaria L.***Cow herb*

Along the railroad at Apalachin. Rare. July.

Dianthus armeria L.*Deptford pink*

Roadsides. Infrequent. Apalachin. Summer.

Dianthus barbatus L.*Sweet william*

Roadsides and waste places. Common. Summer.

Alsine media L.**Stellaria media Smith***Common chickweed*

Very common in damp grounds. March-April.

Alsine longifolia (Muhl.) Britton**Stellaria longifolia Muhl.***Long-leaved stitchwort*

Moist, grassy places. Common. May-July.

Alsine graminea (L.) Britton**Stellaria graminea L.***Lesser stitchwort*

In fields and along roadsides. Frequent. May-July.

Alsine borealis (Bigel.) Britton

Stellaria borealis Bigel.

Northern stitchwort

Along Apalachin creek. Rare. Summer.

Cerastium vulgatum L.

Mouse-ear chickweed

Roadsides, fields, coppices and waste places. Common. May-October.

Cerastium longipedunculatum Muhl.

C. nutans Raf.

Nodding chickweed. Powderhorn

River flats at Barton. Abundant. May-June.

Cerastium arvense L.

Field chickweed

Dry banks at Barton. Frequent. May-June.

Cerastium arvense oblongifolium (Torr.) H. & B.

With the last but more common. May-June.

Arenaria serpyllifolia L.

Thyme-leaved sandwort

Along railroads. Common. June.

Moehringia lateriflora (L.) Fenzl

Arenaria lateriflora L.

Blunt-leaved sandwort

Shaded places along the river. Frequent. June-July.

Spergula arvensis L.

Corn spurry

Common as a weed in cultivated soil. Summer.

Anychia canadensis (L.) B. S. P.

Slender forked chickweed

Dry woods. Frequent. June-August.

NYMPHAEACEAE

Brasenia purpurea (Michx.) Casp.

B. peltata Pursh

Water target

Mutton hill pond. Summer.

Nymphaea advena Soland.

Nuphar advena Ait. f.

Large yellow pond lily

Mutton hill pond. Summer.

Nymphaea kalmiana (Michx.) Sims

Nuphar kalmianum Ait.

Small yellow pond lily

Marshland swamp. Summer.

Castalia odorata (Dryand.) W. & W.

Nymphaea odorata Ait.

Sweet-scented white water lily

Mutton hill pond. Summer.

CERATOPHYLLACEAE.

Ceratophyllum demersum L.

Hornwort

In the river. Frequent. June-July.

MAGNOLIACEAE

Magnolia acuminata L.

Cucumber tree

Frequent throughout the valley as a small tree, the larger trees having been cut for lumber. June.

Liriodendron tulipifera L.

Tulip tree. Whitewood

Rare. June. This tree has been nearly exterminated by the ax of the lumberman.

RANUNCULACEAE

Caltha palustris L.

Cowslip. Marsh marigold

Swamps and wet woodlands. Infrequent. May.

Coptis trifolia (L.) Salisb.

Gold thread

Damp, mossy woods. Common. May.

Actaea rubra (Ait.) Willd.

A. spicata var. **rubra** Ait.

Red baneberry

Woodlands. Frequent. May-June.

Actaea alba (L.) Mill.*White baneberry*

Rich woods. Common. May.

Cimicifuga racemosa (L.) Nutt.*Black cohosh. Black snakeroot*Along the banks of the river, in thickets and borders of woods.
Common. June-July.**Aquilegia canadensis L.***Wild columbine*

Rocky woods and in meadows. Common. May-June.

Aquilegia vulgaris L.*European columbine*Escapes from cultivation and is frequent along roadsides.
May-July.**Delphinium consolida L.***Field larkspur*

Waste places about Apalachin. Summer. Naturalized from Europe.

Anemone virginiana L.*Tall anemone*

River banks and borders of woods. Common. June-August.

Anemone cylindrica Gray.*Long-fruited anemone*

Rare. Barton. June.

Anemone canadensis L.**A. pennsylvanica L.***Canada anemone*

Along the river. Common. May-August.

Anemone quinquefolia L.**A. nemorosa L.***Windflower*

Moist thickets and woods. Common. May.

Hepatica hepatica (L.) Karst.**H. triloba Chaix***Round-lobed liverleaf*

In thickets and woods. Common. March-May.

Hepatica acuta (Pursh) Britton*H. acutiloba* DC.*Sharp-lobed liverleaf*

In the same situations as the former but less common. March-May.

Clematis virginiana L.*Virgin's bower*

Fence rows, banks of streams and thickets. Common. July.
A plant more beautiful in fruit than in flower.

Atragene americana Sims**Clematis verticillaris** DC.*Purple virgin's bower*

Rocky hillsides. Rare. Owego. May.

Ranunculus reptans L.**R. flammula** var. *reptans* E. Meyer*Creeping spearwort*

Shores of the Susquehanna. Infrequent. Apalachin. Summer.

Ranunculus abortivus L.*Kidney-leaved crowfoot*

Woods and moist ground. Common. May-June.

Ranunculus sceleratus L.*Ditch crowfoot*

Ditches. Infrequent. Apalachin and Barton. May-August.

Ranunculus recurvatus Poir.*Hooked crowfoot*

Damp woods. Common. May-June.

Ranunculus acris L.*Meadow buttercup*

Fields and meadows. Common. May-September.

Ranunculus pennsylvanicus L. f.*Bristly buttercup*

Swamps. Frequent. July-August.

Ranunculus septentrionalis Poir.*Swamp buttercup*

Along the river and streams and in swamps. Common. May-July.

Ranunculus hispidus Michx.*Hispid buttercup*

Dry woods and thickets. Common. April-May.

Ranunculus fascicularis Muhl.*Early buttercup*

In the same places as the last species but less common. April-May.

Thalictrum dioicum L.*Early meadow rue*

In shaded stony soil. Common. April-May.

Thalictrum polygamum Muhl.*Tall meadow rue*

In wet meadows and along streams. Common. July.

BERBERIDACEAE

Berberis vulgaris L.*European barberry*

In yards and occasionally as an escape. May-June.

Caulophyllum thalictroides (L.) Michx.*Blue cohosh*

Rich woods and thickets. Frequent. May.

Podophyllum peltatum L.*Mandrake. May apple*

Low woods, thickets and fence rows. Common. May.

MENISPERMACEAE

Menispermum canadense L.*Canada moonseed*

Along the river banks. Frequent. June.

LAURACEAE

Sassafras sassafras (L.) Karst.*S. officinale* Nees*Sassafras*

Woods, thickets and fence rows. Frequent. May.

Benzoin benzoin (L.) Coulter

Lindera benzoin Blume

Spice bush. Benjamin bush

In swamps and wet places. Frequent. April-May. The leaves of young shoots are much larger than those of the matured branches.

PAPAVERACEAE

Papaver somniferum L.

Garden poppy

In waste places. Occasional. Summer.

Sanguinaria canadensis L.

Bloodroot

Thickets along the river. Common. April-May.

Chelidonium majus L.

Celandine

Roadsides and waste places. Frequent. May-September.

Bicuculla cucullaria (L.) Millsp.

Dicentra cucullaria DC.

Dutchman's breeches

Rich woods and thickets, specially along the river. Common. April-May.

Bicuculla canadensis (Goldie) Millsp.

Dicentra canadensis DC.

Squirrel corn

In the same places as the last but much less frequent. May.

Adlumia fungosa (Ait.) Greene

A. cirrhosa Raf.

Climbing fumitory. Alleghany vine

Moist woods and thickets. Infrequent. Tioga Center. Abundant along the Delaware, Lackawanna and Western railroad in the narrows west of Owego. A very beautiful vine. June-October.

CRUCIFERAE

Lepidium campestre (L.) R. Br.

Cow cress

Fields, waste places and along railroads. Common. May-July.

Lepidium virginicum L.*Wild peppergrass*

Roadsides. Common. May-November.

Lepidium apetalum Willd.*Apetalous peppergrass*

Roadsides in dry soil. Common. June-July.

Lepidium sativum L.*Peppergrass*Roadsides at Apalachin. Escaped from gardens. Infrequent.
June-August.**Sisymbrium officinale (L.) Scop.***Hedge mustard*

Waste places. Common. May-November.

Sisymbrium altissimum L.*Tall sisymbrium*Waste places, specially along railroads. Owego. Summer.
This is a bad weed of recent introduction, but it is now established in many parts of the State.**Brassica nigra (L.) Koch***Black mustard*

Fields and waste places. Common. June-November.

Brassica arvensis (L.) B. S. P.**B. sinapistrum Boiss.***Charlock. Wild mustard*

Fields and waste places. Common. May-November.

Brassica campestris L.*Turnip*Occurs occasionally in waste places, but does not persist long.
Summer.**Brassica napus L.***Rape*

This is cultivated for sheep pasture, but sometimes escapes and persists for a short time.

Raphanus sativus L.*Garden radish*

This occasionally escapes from cultivation and is spontaneous for a year or two.

Barbarea barbarea (L.) MacM.**B. vulgaris var. arcuata Gray***Yellow rocket*

Fields. Common. May-June. Young plants are sometimes used for a pot herb.

Barbarea stricta Andr.**B. vulgaris var. stricta Gray***Erect-fruited winter cress*

Fields and waste places. Frequent. May-June.

Roripa sylvestris (L.) Bess.**Nasturtium sylvestre R. Br.***Creeping yellow water cress*

Shores of the Susquehanna at Apalachin. Rare. Summer.

Roripa palustris (L.) Bess.**Nasturtium palustre DC.***Marsh water cress*

Wet places, specially along the river. Common. Summer.

Roripa hispida (Desv.) Britton**Nasturtium palustre var. hispidum Gray**

With the last but less common. Summer.

Roripa nasturtium (L.) Rusby**Nasturtium officinale R. Br.***Water cress*

In brooks and small streams. Frequent. May-November.

Roripa armoracia (L.) A. S. Hitchcock**Nasturtium armoracia Fries***Horse radish*

Waste places and along streams. Common. Summer.

Cardamine pennsylvanica Muhl.*Pennsylvania bitter cress*

Swamps and wet places. Common. May-June.

Cardamine bulbosa (Schreb.) B. S. P.**C. rhomboidea DC.***Bulbous cress*

Damp fields and thickets. Common. May-June.

Dentaria laciniata Muhl.*Cut-leaved toothwort*

Moist soil in rich woods, specially along the river. Common.
May.

Dentaria diphylla Michx.*Two-leaved toothwort*

Rich woods and along small streams. Frequent. May.

Bursa bursa-pastoris (L.) Britton**Capsella bursapastoris** Medic*Shepherd's purse*

Fields and waste places. Abundant. March-January. Frequently used as a pot herb.

Arabis lyrata L.*Lyre-leaved rock cress*

Along the river at Apalachin, growing on stony banks, upturned roots of trees and even on their trunks. Infrequent. May-August.

Arabis dentata T. & G.*Toothed rock cress*

River shores. Infrequent. Barton. May-June.

Arabis hirsuta (L.) Scop.*Hairy rock cress*

Thickets in stony soil. Infrequent. Apalachin and Campville.
May-August.

Arabis laevigata (Muhl.) Poir.*Smooth rock cress*

River banks. Frequent. May.

Arabis canadensis L.*Sickle pod*

Woods and thickets, specially those along the river. Common.
June-August.

Arabis glabra (L.) Bernh.**A. perfoliata** Lam.*Tower mustard*

Stony soil in a thicket near Apalachin. Infrequent. May-August.

Erysimum cheiranthoides L.*Treacle mustard*

Fields and along streams. Common. Summer.

Hesperis matronalis L.*Dames rocket. Dames violet*

Fields and thickets along the river. Common. May-August.

RESEDACEAE

Reseda odorata L.*Mignonette*

Roadsides and waste places. Tioga Center.

SARRACENIACEAE

Sarracenia purpurea L.*Pitcher plant*

Plentiful in peat bogs in the vicinity of Barton. June.

DROSERACEAE

Drosera rotundifolia L.*Round-leaved sundew*

Bogs and specially on partly decayed logs. Mutton hill pond. Barton. July.

CRASSULACEAE

Sedum telephium L.*Live forever*

In fields and along roadsides. Common. July.

Sedum acre L.*Mossy stonecrop*

Occasionally escapes from cultivation. July.

Penthorum sedoides L.*Ditch stonecrop*

Swamps, ditches and along streams. July-August.

SAXIFRAGACEAE

Saxifraga pennsylvanica L.*Swamp saxifrage*

Swamps. Frequent. May.

Saxifraga virginicensis Michx.*Early saxifrage*

Stony banks of the river and in thickets. Common. April-May

Tiarella cordifolia L.*Coolwort. False miterwort*

Rich, moist woods and shaded ravines. Common. May.

Mitella diphylla L.*Miterwort*

In rich woods with the preceding. Common. May.

Chrysosplenium americanum Schwein.*Golden saxifrage. Water carpet*

Wet, shaded places. Common. May.

GROSSULARIACEAE

Ribes cynosbati L.*Wild gooseberry*

Old fields, thickets and fence rows. Frequent. May.

Ribes rotundifolium Michx.*Round-leaved gooseberry*

Rocky woods in the vicinity of Barton. Infrequent. May.

Ribes prostratum L'Her.*Fetid currant*

Cold, wet places near Barton. Occasional. May.

Ribes floridanum L'Her.*Wild black currant*

Woods and thickets. Rather common. May.

Ribes rubrum L.*Red currant*

Cultivated for its fruit, but sometimes it escapes to roadsides. May.

Ribes aureum Pursh*Golden currant*

This also is cultivated for its fruit and its fragrant flowers, but it occasionally escapes and grows spontaneously. May.

HAMAMELIDACEAE

Hamamelis virginiana L.*Witch hazel*

A common shrub in woods and thickets and along fence rows.

Autumn.

PLATANACEAE

Platanus occidentalis L.*Buttonwood. Sycamore*

Along the river and streams. Common. May.

ROSACEAE

Opulaster opulifolius (L.) Kuntze**Physocarpus opulifolius** Maxim*Ninebark*

River banks. Common. June.

Spiraea salicifolia L.*Meadowsweet*

Swamps and moist ground. Common. July.

Spiraea tomentosa L.*Harâhack. Steeple bush*

Swamp east of Campville. Rare. August.

Porteranthus trifolius (L.) Britton**Gillenia trifoliata** Moench*Indian physic. Bowman's root*

Open upland woods. Frequent. June-July.

Rubus odoratus L.*Purple-flowering raspberry*

Rocky woods and ravines. Frequent.

Rubus strigosus Michx.*Wild red raspberry*

Neglected fields and along roadsides and fences. Common.

June. It frequently flowers and fruits in late summer and autumn.

Rubus neglectus Pk.*Purple wild raspberry*

In the same localities as the last, but infrequent. June. It has dark red or purple fruit, long recurved stems and much resembles *R. occidentalis*.

Rubus americanus (Pers.) Britton**R. triflorus** Richards.*Dwarf raspberry*

Swamps and low woods. Frequent. June.

Rubus nigrobaccus Bailey**R. villosus** Ait.*High bush blackberry*

Woods, fields and thickets. Abundant. June. The white-fruited form occurs near Barton.

Rubus villosus frondosus Bigel.

This variety occurs with the typical form.

Rubus allegheniensis Porter*Mountain blackberry*

Thickets and fields. Common. June.

Rubus hispidus L.*Running swamp blackberry*

Plentiful in swamps and low grounds. June.

Rubus procumbens Muhl.**R. canadensis** T. & G.*Dewberry*

Fields and railroad banks. Common. This is our earliest fruiting blackberry. May.

Dalibarda repens L.*Dalibarda. False violet*

Moist woods. Infrequent. Apalachin. June-August.

Fragaria virginiana Duchesne*Strawberry*

Fields and pastures. Common. May-June.

Fragaria vesca L.*European wood strawberry*

Fields and roadsides. Frequent. May-June. An escape from cultivation.

Fragaria americana (Porter) Britton*American wood strawberry*

Rocky woods. Common. May-June.

Potentilla arguta Pursh*Tall cinquefoil*

Along roadsides at Barton. Common. June.

Potentilla argentea L.*Silvery cinquefoil*

Dry fields and roadsides. Common. June-August.

Potentilla monspeliensis L.**P. norvegica L.***Rough cinquefoil*

Fields and waste places. Common. June-September.

Potentilla canadensis L.*Fivefinger*

Abundant in dry fields. May-August.

Potentilla pumila Poir.*Dwarf fivefinger*

Dry fields and banks. Common. April-June.

Comarium palustre L.**Potentilla palustris Scop.***Marsh cinquefoil*Plentiful about Mutton hill pond and in Marshland swamp.
June-August.**Waldsteinia fragarioides (Michx.) Tratt.***Barren strawberry*

Woods and thickets in dry or moist soil. Common. May.

Geum rivale L.*Purple avens. Water avens*

Swamps and low grounds. Frequent. May-June.

Geum canadense Jacq.**G. album Gmelin***White avens*

Shaded places. Common. June.

Geum virginianum L.*Rough avens*

Low ground. Frequent. June.

Geum strictum Ait.*Yellow avens*

Fields, thickets and borders of woods. Common. June.

Agrimonia hirsuta (Muhl.) Bicknell*Tall hairy agrimony*

Woods and thickets. Frequent. June-August.

Agrimonia striata Michx.*Woodland agrimony*

Dry woods. Common. July-September.

Rosa blanda Ait.*Smooth rose*

Rocky places. Common. June.

Rosa carolina L.*Swamp rose*

Swamps and low grounds. Common. Sometimes forming dense thickets. June-July.

Rosa humilis Marsh.*Dwarf rose*

Dry or rocky soil. Common. June.

Rosa humilis lucida (Ehrh.) Best*R. lucida* Ehrh.*Shining wild rose*

Rocky soil. Occasional. June.

Rosa rubiginosa L.*Sweetbrier*

Fields and roadsides. Occasional. June-July.

Rosa cinnamomea L.*Cinnamon rose*

Roadsides in the vicinity of dwellings.

POMACEAE

Sorbus americana Marsh.*Pyrus americana* DC.*American mountain ash*

Swamps. Rare. Barton. June-July.

Pyrus communis L.*Choke pear*

Near dwellings and occasionally in fields. Fruit very astringent. May.

Malus coronaria (L.) Mill.**Pyrus coronaria L.***American crab apple*

Scattered throughout our territory. Flowers rose-colored, fragrant; fruit greenish yellow, fragrant and very acid. May.

Malus malus (L.) Britton**Pyrus malus L.***Apple*

Woods, thickets and fence rows. Fruit sweet or sour. Frequent. May.

Aronia arbutifolia (L.) Ell.**Pyrus arbutifolia L.f.***Red chokeberry*

Marshland swamp. This is the only station observed. May.

Aronia nigra (Wild.) Britton**Pyrus arbutifolia var. melanocarpa Hook.***Black chokeberry*

Swamps and bogs. Common. May-June.

Amelanchier canadensis (L.) Medic*Juneberry*

Woods, thickets and fence rows. Common. May.

Amelanchier botryapium (L.) DC.**A. canadensis var. oblongifolia T. & G.***Shad bush*

Woods and thickets. Common. May.

Amelanchier spicata (Lam.) DC.*Low Juneberry*

Rocky banks. Infrequent. Barton and Apalachin. A shrub 2 to 3 feet high, which fruits very abundantly.

Crataegus crus-galli L.*Cockspur thorn*

Woods and thickets. Frequent. May.

Crataegus punctata Jacq.*Large-fruited thorn*

Thickets and fields. Common. May.

Crataegus oxyacantha L.*Hawthorn*

Yards and their borders. Frequent. May.

Crataegus coccinea L.*Scarlet thorn*

Woods, thickets and pastures. Common. May.

Crataegus macracantha Lodd.**C. coccinea** var. **macracantha** Dudley*Long-spined thorn*

Woods at Apalachin. Occasional. May.

Crataegus tomentosa L.*Pear thorn*

Roadsides near Barton. Rare. It flowers later than our other species of thorns. June.

Prunus americana Marsh.*Wild red plum*

Along streams and in moist woods, often forming thickets. Frequent. May.

Prunus cerasus L.*Sour cherry*

Escaped from cultivation to roadsides and thickets. May.

Prunus avium L.*Sweet cherry*

Escaped from cultivation to roadsides. May.

Prunus pennsylvanica L.f.*Wild red cherry. Pin cherry*

In thickets and along fences. Common. May-June.

Prunus virginiana L.*Choke cherry*

Fence rows, roadsides, banks of the river and along streams. Common. Fruit dark red or almost black, astringent. May.

Prunus serotina Ehrh.*Wild black cherry*

Along fence rows and in woods and clearings. Sometimes growing to a large size. May.

Amygdalus persica L.**Prunus persica L.***Peach*

Roadsides and neglected fields. April-May.

CAESALPINACEAE

Cassia nictitans L.*Sensitive pea*

River shore west of Campville. August.

Gleditsia triacanthos L.*Honey locust*

Abundant in hedges on the river flats at Campville. May-June.

PAPILIONACEAE

Lupinus perennis L.*Wild lupine*

Banks, specially along railroads. Abundant in some places. May-June.

Medicago sativa L.*Alfalfa. Lucerne*

In fields and along railroads. Frequent. Summer.

Medicago lupulina L.*Black medic. Nonesuch*

Fields, waste places and specially along railroads. May-November.

Melilotus alba Desv.*White sweet clover*

Waste places and along railroads. Common. June-October.

Melilotus officinalis (L.) Lam.*Yellow sweet clover*

Waste places. Infrequent. Apalachin and Campville. Summer.

Trifolium agrarium L.*Yellow clover. Hop clover*

Fields and roadsides. Frequent. May-September.

Trifolium procumbens L.*Low hop clover*

Fields in the vicinity of Campville. Infrequent. May-September.

Trifolium incarnatum L.*Crimson clover*

Meadows. Frequent. A beautiful species with conspicuous, bright crimson flowers. Often cultivated. Summer.

Trifolium arvense L.*Rabbit foot. Stone clover*

Along roadsides at Apalachin and Barton. Common. Summer.

Trifolium pratense L.*Red clover*

Fields and meadows. Abundant. May-October.

Trifolium hybridum L.*Alsike clover*

Grass lands. Common. June-October.

Trifolium repens L.*White clover*

Fields, open and waste places. Very common. May-December.

Robinia pseudacacia L.*Locust tree*

Naturalized along the banks of the Susquehanna and often forming almost impenetrable thickets. June.

Robinia viscosa Vent.*Clammy locust*

Roadside near Waverly. June.

Meibomia nudiflora (L.) Kuntze**Desmodium nudiflorum DC.***Naked-flowered tick trefoil*

Dry woods and thickets. Common. July-August.

Meibomia grandiflora (Walt.) Kuntze**Desmodium acuminatum DC.***Pointed-leaved tick trefoil*

Woods. Common. Summer.

Meibomia michauxii Vail*Prostrate tick trefoil*

Dry woods in various places near Campville. July-September.

Meibomia paniculata (L.) Kuntze**Desmodium paniculatum DC.***Panicled tick trefoil*

Dry soil in coppices. Common. July-September.

Meibomia dillenii (Darl.) Kuntze**Desmodium dillenii Darl.***Dillen's tick trefoil*

Dry woods and fields. Common. Summer.

Meibomia canadensis (L.) Kuntze**Desmodium canadense DC.***Showy tick trefoil*Abundant along the river shores and railroad embankments.
July-September.**Meibomia marylandica (L.) Kuntze****Desmodium marylandicum Boott.***Smooth, small-leaved tick trefoil*

Dry soil. Frequent. July-September.

Lespedeza procumbens Michx.*Trailing bush clover*Dry soil at the base of a hill near Apalachin. The only station.
August-September.**Lespedeza violacea (L.) Pers.***Bush clover*Dry banks of the river at Apalachin and Barton. Infrequent.
August-September.

Lespedeza frutescens (L.) Britton**L. stuvei var. intermedia Wats.***Wandlike bush clover*

Dry open coppices along the river. August-September.

Lespedeza hirta (L.) Ell.**L. polystachya Michx.***Hairy bush clover*

Dry thickets. Common. August-October.

Lespedeza capitata Michx.*Round-headed bush clover*

Dry banks in the river valley. Abundant. August-September.

Vicia cracca L.*Tufted vetch*

Along roadsides and in dry fields. Frequent. May-August.

Vicia americana Muhl.*American vetch*

Damp soil along the river. Common. May-August.

Vicia caroliniana Walt.*Carolina vetch*

River valley. Common. May-July.

Lathyrus ochroleucus Hook.*Cream-colored vetchling*

Infrequent at Apalachin but common in the western part of our range. May-July.

Falcata comosa (L.) Kuntze**Amphicarpa monoica Nutt.***Wild peanut*

Moist thickets. Common. August-September.

Apios apios (L.) MacM.**A. tuberosa Moench***Ground nut*

Damp grounds, specially along the river. Common. July-September.

GERANIACEAE

Geranium maculatum L.*Spotted crane's-bill. Alum root*

Woods, thickets and moist meadows. Common. May-July.

Geranium robertianum L.*Herb robert. Red robin*

Rocky woods. Infrequent. May-September.

Geranium carolinianum L.*Carolina cranesbill*

River valley. Frequent. May-August.

Geranium bicknellii Britton*Bicknell's cranesbill*

With the last but more common. May-September.

OXALIDACEAE

Oxalis acetosella L.*White wood sorrel*

Cold, damp woods, specially under hemlocks. It bears cleistogamous flowers and yields the so called "salt of lemons." Common. June-July.

Oxalis violacea L.*Violet wood sorrel*

Open woods at Campville and in alluvial soil along Apalachin creek and along the river at Apalachin. May-June.

Oxalis stricta L.*O. corniculata* var. *stricta* Sav.*Yellow wood sorrel*

Woods and fields. Common. May-October.

Oxalis cymosa Small*Tall yellow wood sorrel*

Woods, cultivated and waste ground. Frequent. May-October.

LINACEAE

Linum usitatissimum L.*Flax*

Along railroads. Frequent. Summer.

Linum virginianum L.*Wild yellow flax*

In an old field near Campville. The only station. June.

RUTACEAE

Xanthoxylum americanum Mill.*Prickly ash*

Roadsides at Apalachin and Barton. May.

SIMARUBACEAE

Ailanthus glandulosus Desf.*Tree of heaven*

Introduced from China. Escaped from cultivation at Barton.
It spreads freely both by seeds and suckers.

POLYGALACEAE

Polygala verticillata L.*Whorled milkwort*

Fields and roadsides in dry soil. Common. June-November.

Polygala viridescens L.*P. sanguinea* L.*Purple milkwort*

Hilltops near Apalachin. Infrequent. June-September.

Polygala senega L.*Seneca snakeroot*

Apalachin, Owego and Barton. Infrequent. June.

Polygala paucifolia Willd.*Flowering wintergreen. Fringed milkwort*

Open woods and thickets. Common. May-June.

EUPHORBIACEAE

Acalypha virginica L.*Three-seeded mercury*

A weed plentiful in fields. June-October.

Euphorbia maculata L.*Spotted spurge. Milk purslane*

Dry, gravelly soil, specially along railroads. Very common.
June-October.

Euphorbia nutans Lag.*E. preslii* Guss.*Large spotted spurge*

With the last but less common. May-October.

Euphorbia corollata L.*Flowering spurge*

Waste places. Occasional. May-September.

Euphorbia lucida W. & R.**E. nicaeensis All.***Nicaean spurge*

About villages throughout the river valley. June-July.

Euphorbia cyparissias L.*Cypress spurge*

Roadsides and waste places. Common. Abundant in old cemeteries. May-September.

CALLITRICHACEAE

Callitriche palustris L.**C. verna L.***Vernal water starwort*

Slow streams. Occasional. July.

ANACARDIACEAE

Rhus hirta (L.) Sudw.**R. typhina L.***Staghorn sumac*

Dry or rocky soil. Common. June.

Rhus glabra L.*Smooth sumac*

Dry soil. Common. June.

Rhus vernix L.**R. venenata DC.***Poison sumac*

Swamps and their borders. Frequent. Plentiful about Mutton hill pond. June.

Rhus radicans L.**R. toxicodendron L.***Poison ivy*

Damp thickets, along fences and river banks. Common. June.

ILICACEAE

Ilex verticillata (L.) Gray*Black alder. Winter berry*

Swamps. Common. A shrub rendered conspicuous in late autumn and winter by its bright red berries.

Ilicioides mucronata (L.) Britton**Nemopanthes fascicularis** Raf.*Mountain holly*

Swamps and bogs. Frequent. May.

CELASTRACEAE

Euonymus europaeus L.*Spindle tree*

Escaped from cultivation. Infrequent. Apalachin. June.

Celastrus scandens L.*Climbing bittersweet*

Rich soil along fences and streams. An attractive plant when in fruit. Frequent. June.

STAPHYLEACEAE

Staphylea trifolia L.*American bladder nut*

Abundant along the south bank of the river at Barton. Formerly found at Apalachin. May.

ACERACEAE

Acer saccharinum L.**A. dasycarpum** Ehrh.*Silver maple*

Along banks of streams. The principal tree along the banks of the river. Common. March-April.

Acer rubrum L.*Soft maple. Red maple*

Wet or dry soil. Common. March-April.

Acer saccharum Marsh.**A. saccharinum** Wang.*Hard maple. Sugar maple. Rock maple*

Woods and fields. Common. April-May. This is often planted as a shade tree. Its sap is the main source of maple sugar.

Acer nigrum Michx.

A. saccharinum var. nigrum T. & G.

Black sugar maple

Less common than the preceding species, which it closely resembles, but from which it may easily be distinguished by the bark and leaves. The sap is rich in sugar. April-May.

Acer pennsylvanicum L.*Striped maple. Moosewood*

Rocky woods and ravines. Common. June.

Acer spicatum Lam.*Mountain maple*

Along streams, in glens and ravines. Common. June.

HIPPOCASTANACEAE

Aesculus hippocastanum L.*Horse-chestnut*

Cultivated as a shade tree, and occasionally escapes from cultivation. June.

BALSAMINACEAE

Impatiens biflora Walt.*I. fulva Nutt.**Spotted touch-me-not*

Damp, shaded places. Common. July-September.

Impatiens aurea Muhl.*I. pallida Nutt.**Pale touch-me-not*

With the last but more abundant along the river. July-September. The mature capsules of both species burst at the slightest touch and expel the seeds with much force; hence the name "touch-me-not."

RHAMNACEAE

Rhamnus cathartica L.*Buckthorn*

Planted for hedges, but it occasionally escapes to fields and fence rows. June.

Rhamnus alnifolia L'Her.*Alder-leaved buckthorn*

Swamps north of Barton. Infrequent. June.

Ceanothus americanus L.*New Jersey tea. Redroot*

Dry, open woods and neglected fields. Abundant. June. The leaves are said to have been used as a substitute for tea by the American troops during the Revolutionary War.

VITACEAE

Vitis aestivalis Michx.*Summer grape*

Fence rows and along the river banks. Common. June. The fruit ripens early in autumn.

Vitis vulpina L.*Sweet-scented grape*

Banks of the river. Frequent. May-June. Fruit ripe in August and September.

Vitis cordifolia Michx.*Frost grape. Chicken grape*

Thickets and banks of streams. Common. May-June. Fruit ripe in October and November.

Parthenocissus quinquefolia (L.) Planch.**Ampelopsis quinquefolia Michx.***Virginia creeper. American ivy*

Woods, thickets and fence rows. Common. July.

TILIACEAE

Tilia americana L.*Basswood. American linden*

Rich soil. Common. June-July.

MALVACEAE

Malva sylvestris L.*High mallow*

Waste places and along roadsides. Infrequent. Summer.

Malva rotundifolia L.*Low mallow. Cheeses*

Gardens and waste places. Abundant. May-November.

Malva moschata L.*Musk mallow*

Meadows and roadsides. Frequent. Summer.

Abutilon abutilon (L.) Rusby*A. avicennae* Gaertn.*Velvet leaf. Indian mallow*

Gardens and waste places. Common. August-October.

Hibiscus trionum L.*Flower-of-an-hour*

Waste places at Barton. Adventive from Europe. August-September.

HYPERICACEAE

Hypericum ascyron L.*Great St John's wort*

Banks of the river. Common. July.

Hypericum ellipticum Hook.*Pale St John's wort*

Swamps and banks of streams. Common. July-August.

Hypericum perforatum L.*Common St John's wort*

Abundant in fields and waste places. June-September.

Hypericum maculatum Walt.*Corymbed St John's wort*

Fields, roadsides and open woods. Common. July-September.

Hypericum mutilum L.*Dwarf St John's wort*

Common in damp, sterile soil. July-August.

Hypericum canadense L.*Canadian St John's wort*

Wet sandy soil. Frequent. July-September.

Triadenum virginicum (L.) Raf.*Elodes campanulata* Pursh*Marsh St John's wort*

Swamps and along streams. Common. July-September.

CISTACEAE

Helianthemum canadense (L.) Michx.*Frostweed*

Plentiful along both banks of the river at Apalachin. May-July.

VIOLACEAE

Viola palmata L.*Early blue violet*

Dry, open thickets, specially along roadsides. Frequent. May. The leaves of this species are very variable, and some forms of the plant closely resemble *V. atlantica* Britton.

Viola obliqua Hill*V. palmata* var. *cucullata* Gray*Hooded violet*

Damp woods, meadows and swamps. May-June.

Viola papilionacea Pursh*Common blue violet*

About dwellings and in grass lands. Our most common species. May-June.

Viola domestica Bicknell*Yard violet*

Yards and cultivated ground. Frequent. April-May. Sometimes considered a variety of the preceding species.

Viola cucullata Ait.*Marsh blue violet*

Near the mouth of Apalachin creek. Infrequent. May-June.

Viola villosa Walt.*Southern wood violet*

Dry, shaded soil. The "hogback" near Apalachin, the only station for it in our range. Its leaves are closely pressed to the ground, and it much resembles the false violet, *Dalibarda repens*. April-May.

Viola sororia Willd.*Woolly blue violet*

Fields and roadsides. Common. Plentiful along the Mutton hill road. May-June.

Viola sagittata Ait.*Arrow-leaved violet*

Meadows near Apalachin. Rare. May.

Viola ovata Nutt.*Ovate-leaved violet*

Fields and roadsides in dry soil. Common. April-May.

Viola rotundifolia Michx.*Round-leaved violet*

Cold, damp woods. Frequent. April-May. Its leaves are small at flowering time, but they are 3-5 inches broad in summer and appressed to the ground.

Viola blanda Willd.*Sweet white violet*

Swamps, wet woods and along streams. Common. April-May.

Viola blanda amoena (Le Conte) B. S. P.**V. blanda var. palustriformis Gray**

Wet woods. Not common.

Viola pubescens Ait.*Hairy yellow violet*

Woods in dry soil. Common. May.

Viola scabriuscula (T. & G.) Schwein.**V. pubescens var. scabriuscula T. & G.***Smooth yellow violet*

Damp woods and thickets along the river. Common. April-May.

Viola canadensis L.*Canada violet*

Woods. Infrequent. May-July.

Viola striata Ait.*Pale violet. Striped violet*

Low woods and thickets in the river valley. Very common. May.

Viola labradorica Schrank.**V. canina var. muhlenbergii Gray***Dog violet*

Moist woods and fields. Our most abundant caulescent violet. April-May.

Viola rostrata Pursh*Long-spurred violet*

Moist, rocky places. Scarce. June.

THYMELEACEAE

Dirca palustris L.*Moosewood*

Cold, damp woods, specially along mountain streams. Infrequent. April-May.

ONAGRACEAE

Isnardia palustris L.**Ludwigia palustris** Ell.*Marsh purslane*

Swamps and muddy places along brooks. Common. June-October.

Chamaenerion angustifolium (L.) Scop.**Epilobium angustifolium** L.*Great willow herb. Fireweed*

Wet or dry soil. Often abundant in woodlands recently over-run by fire. June-August.

Epilobium lineare Muhl.*Linear-leaved willow-herb*

Swamps. Common. July-August.

Epilobium coloratum Muhl.*Purple-leaved willow-herb*

Low grounds. Infrequent. July-September.

Epilobium adenocaulon Haussk.*Northern willow-herb*

Moist ground. Common. July-September.

Onagra biennis (L.) Scop.**Oenothera biennis** L.*Evening primrose*

Roadsides and fields. Common. June-September.

Kneiffia pumila (L.) Spach**Oenothera pumila** L.*Small sundrops*

Fields in wet or dry soil. Common. June-July.

Kneiffia fruticosa (L.) Raimann**Oenothera fruticosa** L.*Common sundrops*

Dry soil. Frequent. June-July.

Gaura biennis L.*Biennial gaura*

Meadows and pastures along the river. July-August.

Circaea lutetiana L.*Enchanter's nightshade*

Rich, moist woods. Common. June-July.

Circaea alpina L.*Smaller enchanter's nightshade*

Cold, moist woods. July-August. This plant seems to prefer the sites of old logs.

HALORAGIDACEAE

Myriophyllum spicatum L.*Spiked water milfoil*

Susquehanna river in deep water. Infrequent. Summer.

ARALIACEAE

Aralia nudicaulis L.*Wild sarsaparilla*

Woods and thickets. Common. May-June.

Aralia racemosa L.*Spikenard*

Damp, shaded places. Frequent. July.

Aralia hispida Vent.*Bristly sarsaparilla. Dwarf elder*

Swamps and openings on dry hemlock knolls. Infrequent. June.

Panax quinquefolium L.**Aralia quinquefolia D. & P.***Ginseng*

Rich woods. Rare. July. Formerly more common but now fast disappearing, because of the high price paid for its roots.

Panax trifolium L.**Aralia trifolia D. & P.***Ground nut*

Moist woods and thickets. Common. May.

UMBELLIFERAE

Daucus carota L.*Wild carrot*

Fields and roadsides. Very common. June-September.

Angelica atropurpurea L.*Purple-stemmed angelica*

Along streams. Common. June-July.

Angelica villosa (Walt.) B. S. P.**A. hirsuta** Muhl.*Hairy angelica*

Dry, open woods. Common. July.

Heracleum lanatum Michx.*Cow parsnip*

Low ground along the river and its branches. Common. June.

Pastinaca sativa L.*Wild parsnip*

Roadsides and waste places. Common. Summer.

Thaspium trifoliatum aureum (Nutt.) Britton**T. aureum** Nutt.*Golden alexanders*

Woods, thickets and meadows. Common. June.

Thaspium barbinode (Michx.) Nutt.*Meadow parsnip*

Alluvial soil. Frequent. May-June.

Sanicula marylandica L.*Sanicle. Black snakeroot*

Rich woods. Common. May-June.

Pimpinella integerrima (L.) Gray*Yellow pimpinella*

Rocky soil. Common. May.

Washingtonia claytoni (Michx.) Britton**Osmorrhiza brevistylis** DC.*Hairy sweet cicely*

Woods. Common. May-June.

Washingtonia longistylis (Torr.) Britton

Osmorrhiza longistylis DC.

Smooth sweet cicely

Woods and shaded places in fields and by roadsides. Common.
May-June.

Conium maculatum L.

Poison hemlock

Waste places. Frequent. June. The root is very poisonous.

Sium cicutaefolium Gmel.

Water parsnip

Swamps. Common. July-September.

Zizia aurea (L.) Koch

Golden meadow parsnip

Fields and meadows. Common. May.

Zizia cordata (Walt.) DC.

Heart-leaved alexanders

Open woods and thickets. Frequent. May.

Carum carui L.

Caraway

Dooryards and waste places. Common. May-June.

Cicuta maculata L.

Water hemlock. Musquash root

Swamps. Common. June-July.

Cicuta bulbifera L.

Bulb-bearing water hemlock

Swamps, ponds and along streams. Frequent. Plentiful about
Mutton hill pond. July-August.

Deringa canadensis (L.) Kuntze

Cryptotaenia canadensis DC.

Honewort

Woods. Common. June.

Hydrocotyle americana L.

Marsh pennywort

Wet, shaded places. Common. June-September.

CORNACEAE

Cornus canadensis L.*Dwarf cornel. Bunchberry*

Low woods and damp, shaded places. Abundant. May-June.

Cornus florida L.*Flowering dogwood*

Upland woods. Common. April-May. This shrub or small tree is conspicuous in early spring by reason of its large, white, bracted flowers and again in autumn by its bright red leaves. Its wood is hard and used in the manufacture of toys.

Cornus circinata L'Her.*Round-leaved cornel*

Thickets. Frequent. June.

Cornus amomum Mill.**C. sericea L.***Silky cornel. Kinnikinick*

Low woods, borders of swamps and along streams. June.

Cornus stolonifera Michx.*Red osier*

Borders of swamps. Common. June.

Cornus candidissima Marsh.**C. paniculata L'Her.***Panicled cornel*

Thickets and fence rows. Common. June.

Cornus alternifolia L. f.*Alternate-leaved cornel*

Open woods. Common. June.

Nyssa sylvatica Marsh.*Pepperidge. Sour gum*

Moist soil, specially along the borders of swamps. Frequent. May. This tree is conspicuous in autumn by its bright crimson leaves. Its wood is soft but hard to split, and at an early day was much used for ox yokes.

PYROLACEAE

Pyrola rotundifolia L.*Round-leaved wintergreen*

Rich woods. Common. July.

Pyrola chlorantha Sw.*Greenish-flowered wintergreen***Pyrola elliptica** Nutt.*Shin leaf*

Rich woods. Common. July.

Pyrola secunda L.*One-sided wintergreen*

Woods and thickets. Common. July.

Chimaphila maculata L.*Spotted wintergreen*

Dry woods west of Barton. Rare. June-July.

Chimaphila umbellata (L.) Nutt.*Prince's pine. Pipsissewa*

Dry, rich woods. Common. June-July.

MONOTROPACEAE

Monotropa uniflora L.*Indian pipe*

Moist, rich woods. Frequent. July.

ERICACEAE

Azalea nudiflora L.**Rhododendron nudiflorum** Torr.*Azalea. Mayflower*

Woods and thickets. Common. May.

Azalea canescens Michx.*Mountain azalea*

Brush lots and borders of swamps. Common. May.

Kalmia latifolia L.*Mountain laurel*

Rocky woods, specially on the sides of rocky ravines. Near Campville, in the Delaware, Lackawanna and Western narrows near Owego, and on Watch hill. June.

Kalmia glauca Ait.

Pale laurel

Bogs north of Barton. Rare. June.

Andromeda polifolia L.

Wild rosemary. Moorwort

Bogs north of Barton. Infrequent. May.

Xolisma ligustrina (L.) Britton

Andromeda ligustrina Muhl.

Andromeda

Wet or dry soil but more frequently in swamps. Common. June.

Chamaedaphne calyculata (L.) Moench

Cassandra calyculata Don

Leather leaf

Bogs and swamps, where it forms low, dense thickets. Abundant. May.

Epigaea repens L.

Trailing arbutus. Mayflower

Woods and bushy fields, preferring damp situations. April-May.

Gaultheria procumbens L.

Wintergreen

Woods and thickets in soil wet or dry. Common. June-July.

VACCINIACEAE

Gaylussacia resinosa (Ait.) T. & G.

Black huckleberry

Woods and thickets, preferring rocky soil. Common. May.

Vaccinium corymbosum L.

Swamp blueberry

Swamps and their borders. Common. May.

Vaccinium atrococcum (Gray) Heller

V. corymbosum var. *atrococcum* Gray

Black blueberry

Swamps. Frequent. May.

Vaccinium pennsylvanicum Lam.*Dwarf blueberry*

Dry, rocky or sandy soil. Common. May.

Vaccinium nigrum (Wood) Britton**V. pennsylvanicum** var. **nigrum** Wood*Low black blueberry*

Dry, rocky soil. Frequent. May.

Vaccinium vacillans Kalm*Low blueberry*

Dry soil. Common. May.

Vaccinium stamineum L.*Deerberry*

Dry thickets, specially on hillsides. Common. May. The Canada blueberry, *V. canadense*, which is common in nearly all elevated swamps, is apparently wanting in our limits.

Chiogenes hispidula (L.) T. & G.**C. serpyllifolia** Salisb.*Creeping snowberry*

Bogs and cold wet woods north of Barton. May. This plant has the odor and flavor of birch. Its fruit is white.

Oxycoccus oxycoccus (L.) MacM.**Vaccinium oxycoccus** L.*Small cranberry*

Bogs north of Barton. June.

Oxycoccus macrocarpus (Ait.) Pers.**Vaccinium macrocarpon** Ait.*Large cranberry*

Mutton hill pond and bogs near Barton. June. More common than the preceding species.

PRIMULACEAE

Lysimachia quadrifolia L.*Whorled loosestrife*

Thickets and neglected fields. Common. June-July.

Lysimachia terrestris (L.) B. S. P.

L. stricta Ait.

Bulb-bearing loosestrife

Swamps, moist thickets and the river shores. Common. July-September.

Lysimachia nummularia L.*Moneywort*

Lawns and roadsides near houses. Common. June-August.

Steironema ciliatum (L.) Raf.*Fringed loosestrife*

Moist thickets. Common. June-July.

Naumbergia thyrsiflora (L.) Duby**Lysimachia thyrsiflora L.***Tufted loosestrife*

Swamps north of Barton. Infrequent. May-June.

Trientalis americana Pursh*Star flower*

Damp woods. Common. May.

OLEACEAE

Syringa vulgaris L.*Lilac*

Roadsides, specially near deserted dwellings, occasionally in fields. Common. May.

Fraxinus americana L.*White ash*

Common in rich woods. May.

Fraxinus pennsylvanica Marsh.

F. pubescens Lam.

Red ash

Moist soil. Frequent. May.

Fraxinus nigra Marsh.

F. sambucifolia Lam.

Black ash

Swamps. Common. May.

Ligustrum vulgare L.*Privet*

Escaped from cultivation to roadsides in the vicinity of Barton. July.

GENTIANACEAE

Gentiana crinita Froel.*Fringed gentian*

Plentiful in a moist field near Apalachin. This is its only known station in our limits. Autumn.

Gentiana quinquefolia L.**G. quinqueflora Lam.***Stiff gentian. Ague weed*

Neglected fields. Common. September.

Gentiana andrewsii Griseb.*Closed gentian*

Moist soil, specially along streams. Frequent. August-September.

MENYANTHACEAE

Menyanthes trifoliata L.*Buck bean. Bog bean*

Bogs. Mutton hill pond. Infrequent. May-June.

APOCYNACEAE

Vinca minor L.*Myrtle. Periwinkle*

Dooryards and specially abundant about old graveyards. May.

Apocynum androsaemifolium L.*Spreading dogbane*

Fields, thickets and fence rows. Common. July.

Apocynum cannabinum L.*Indian hemp*

Abundant on gravelly shores of the river. July-August.

ASCLEPIADACEAE

Asclepias tuberosa L.*Butterfly weed. Pleurisy root*

Dry fields and along railroads. Frequent. August. Abundant along the Erie railroad east of Campville.

Asclepias incarnata L.*Swamp milkweed*

Swamps and wet places. Common. July-August.

Asclepias exaltata (L.) Muhl.**A. phytolaccoides Pursh***Tall milkweed*

Open woodlands. Common. July.

Asclepias quadrifolia Jacq.*Four-leaved milkweed*

Woods and thickets. Common. June-July.

Asclepias syriaca L.**A. cornuti Dec.***Common milkweed. Silkweed*

Fields and waste places. Very common. July.

CONVOLVULACEAE

Ipomoea purpurea (L.) Roth*Morning-glory*

Waste places. Frequent. Escapes from cultivation.

Convolvulus sepium L.*Hedge bindweed*

Thickets and fields. Abundant on the river flats. Common. Summer.

Convolvulus spithameus L.*Upright bindweed*

Rocky banks. Common. June.

Convolvulus arvensis L.*Field bindweed*

Along the railroad at Apalachin. Rare. July-August.

CUSCUTACEAE

Cuscuta coryli Engelm.**C. inflexa Engelm.***Hazel dodder*

River flats at Campville. Rare. August. It grows on hazel bushes.

Cuscuta gronovii Willd.*Dodder. Love vine*

Damp, shaded grounds, parasitic on herbs and low shrubs.
Very common. August.

POLEMONIACEAE

Phlox paniculata L.*Garden phlox*

Cultivated for its flowers, but it frequently escapes from
gardens. July.

Phlox maculata L.*Wild sweet william*

Cultivated for its flowers, but it occasionally escapes from
gardens. June-July.

Phlox divaricata L.*Wild blue phlox*

Moist woods along streams, specially along Apalachin creek.
Common. May.

Phlox subulata L.*Ground pink. Moss pink*

Common on hillsides from Smithboro to the western limit of
our range. April-May.

Polemonium reptans L.*Greek valerian. Jacob's ladder*

Low woods along the river at Barton. Scarce in the eastern
part of our range. May.

HYDROPHYLLACEAE

Hydrophyllum virginicum L.*Virginia waterleaf*

Woods and shady places. Common. June.

Hydrophyllum canadense L.*Broad-leaved waterleaf*

Plentiful in bottom woods near Barton but not observed else-
where in our limits.

BORAGINACEAE

Cynoglossum officinale L.*Hound's-tongue*

Fields and waste places. Frequent. June-July.

Cynoglossum virginicum L.*Wild comfrey*

Open woods. Infrequent. May.

Lappula virginiana (L.) Greene**Echinosperrum virginicum Lehm.***Beggar's lice. Virginia stickseed*

Woods and thickets. Common. Summer.

Mertensia virginica (L.) DC.*Lungwort*

Banks of the river and along streams. Abundant in some places. May.

Myosotis palustris (L.) Lam.*Forget-me-not*

Occasionally escapes from cultivation. May-June.

Myosotis laxa Lehm.*Small forget-me-not*

Streams and muddy places. Common. June-July.

Lithospermum arvense L.*Corn gromwell*

Along railroads. Barton and Campville. Infrequent. June-July.

Symphytum officinale L.*Comfrey*

Fields and waste places. Occasional. June.

Lycopsis arvensis L.*Small bugloss*

Near Tioga Center. Rare. June-August.

Echium vulgare L.*Blueweed. Viper's bugloss*

Along railroads and in waste places at Owego. Common. July.

VERBENACEAE

Verbena urticifolia L.*White vervain*

Fields, woods and waste places. Common. July-August.

Verbena hastata L.*Blue vervain*

Fields and waste places, specially along streams. Common.
July-August.

LABIATAE

Teucrium canadense L.*Wood sage. Germander*

Common on the river flats. July-August.

Trichostema dichotomum L.*Blue curls*

Plentiful on the river flats opposite Apalachin. August-September.

Scutellaria lateriflora L.*Mad-dog skullcap*

Swamps and wet places. Common. August.

Scutellaria galericulata L.*Marsh skullcap*

Marshes, borders of ponds and along streams. Common. July-August.

Agastache scrophulariaefolia (Willd.) Kuntze**Lophanthus scrophulariaefolius Benth.***Giant hyssop*

Thickets along the river banks. Infrequent. August-September.

Nepeta cataria L.*Catnip. Catmint*

Waste places. Common. July-November.

Glechoma hederacea L.**Nepeta glechoma Benth.***Ground ivy. Gill-over-the-ground*

Woods, thickets, swamps and waste places. Common. April-May.

Prunella vulgaris L.**Brunella vulgaris L.***Self-heal. Heal-all*

Fields, woods and pastures. Very common. June-October.

Galeopsis tetrahit L.*Hemp nettle*

Waste places. Common. July-August.

Leonurus cardiaca L.*Motherwort*

Waste places about dwellings. Common. July-August.

Lamium amplexicaule L.*Henbit. Dead nettle*

Thickets, waste places and cultivated ground. Infrequent.
Apalachin and Barton. May-September.

Lamium maculatum L.*Spotted dead nettle*

Roadsides at Barton. June-September.

Stachys aspera Michx.*Rough hedge nettle*

Low grounds. Not common. July-August.

Monarda didyma L.*Oswego tea. American bee balm*

Moist soil, specially along the river and creeks. Common.
July-August.

Monarda clinopodia L.*Basil balm*

Plentiful on the Marshland farm, in thickets along the river and
in Mutton hill pond woods. July.

Monarda fistulosa L.*Wild bergamot*

Dry soil in neglected fields. Common. July-August.

Monarda media Willd.**M. fistulosa var. rubra Gray***Purple bergamot*

Moist thickets at Barton. Rare. June-August.

Blephilia ciliata (L.) Raf.*Downy blephilia*

Thickets near Apalachin. Rare. July-August.

Hedeoma pulegioides (L.) Pers.

American pennyroyal

Dry fields, specially on hills. Abundant. August.

Clinopodium vulgare L.

Calamintha clinopodium Benth.

Wild basil

Woods, fields and thickets. Common. Summer.

Koellia flexuosa (Walt.) MacM.

Pycnanthemum linifolium Pursh

Narrow-leaved mountain mint

Fields near Campville. August.

Koellia virginiana (L.) MacM.

Pycnanthemum lanceolatum Pursh

Virginia mountain mint

Fields near Campville and Barton. August.

Koellia incana (L.) Kuntze

Pycnanthemum incanum Michx.

Hoary mountain mint

Thickets and dry hillsides. More common than the two preceding species. September-October.

Thymus serpyllum L.

Creeping thyme

Old graveyards. Naturalized. Summer.

Lycopus virginicus L.

Bugleweed

Wet soil. Common. August.

Lycopus americanus Muhl.

L. sinuatus Ell.

Cut-leaved water hoarhound

Damp grounds. Common. July-September.

Mentha spicata L.

M. viridis L.

Spearmint

Wet ground and along streams. Common. August.

Mentha piperita L.*Peppermint*

Wet soil and along streams. Common. August.

Mentha citrata Ehrh.*Bergamot mint*

Roadsides. Occasional. August.

Mentha canadensis L.*American wild mint*

Low ground. Common. August-September.

Collinsonia canadensis L.*Horse balm. Richweed. Stoneroot*

Moist woods and thickets. Common. August. Its flowers have an odor like that of lemons.

SOLANACEAE

Physalodes physalodes (L.) Britton**Nicandra physalodes** Gaertn.*Apple of Peru*

Waste places, specially about gardens. August-September.

Physalis philadelphica Lam.*Philadelphia ground cherry*

Waste places at Apalachin. Rare. August.

Physalis heterophylla Nees*P. virginiana* Mill.*Clammy ground cherry*

Cultivated grounds and along railroads. Common. August-September.

Solanum nigrum L.*Black nightshade*

Waste ground at Barton. Rare. August-September.

Solanum carolinense L.*Horse nettle*

Plentiful in cultivated fields near Apalachin. June-September.

Solanum dulcamara L.*Nightshade. Bittersweet*

Waste places, along streams and in swamps, often growing in water. Common. June-September.

Lycium vulgare (Ait.) Dunal*Matrimony vine*

About old, deserted dwellings. Frequent. June-August.

Datura stramonium L.*Thorn apple. Jimson weed*

Waste grounds. Infrequent. August.

SCROPHULARIACEAE

Verbascum thapsus L.*Great mullein*

Dry soil in fields. Common. July.

Verbascum blattaria L.*Moth mullein*

Pastures, fields and waysides. Frequent. July-October.

Cymbalaria cymbalaria (L.) Wettst.**Linaria cymbalaria** Mill.*Kenilworth ivy*

Introduced from Europe but well established at Owego and growing on stone abutments facing the river. June-August.

Linaria linaria (L.) Karst.**L. vulgaris** Mill.*Yellow toadflax. Butter and eggs*

Fields and waste places. Abundant. June-October. A troublesome weed.

Scrophularia marylandica L.**S. nodosa** var. **marylandica** Gray*Figwort*

Fields, thickets and roadsides. Frequent. August.

Scrophularia leporella Bickn.*Hare figwort*

With the preceding species but more common. Abundant along the river. June-July.

Chelone glabra L.*Snakehead. Balmony*

Swamps and along streams. Common. August-September.

Pentstemon hirsutus (L.) Willd.**P. pubescens Soland.***Hairy beard-tongue*

Roadsides and banks in dry soil. Common. June.

Pentstemon digitalis (Sweet) Nutt.**P. laevis var. digitalis Gray***Foxglove beard-tongue*

In a meadow at Apalachin. Rare. June.

Mimulus ringens L.*Monkey flower*

Wet soil, specially along streams. Common. July-September.

Gratiola virginiana L.*Clammy hedge hyssop*

Muddy places. Common. June-September.

Ilysanthes gratioides (L.) Benth.**I. riparia Raf.***False pimpernel*

Wet soil on the shores of streams and ponds. Common. August.

Veronica anagallis-aquatica L.**V. anagallis L.***Water speedwell*

Plentiful in a ditch opposite Apalachin. June-August.

Veronica americana Schwein.*American brooklime*

Swamps, ditches and brooks. Common. May-August.

Veronica scutellata L.*Marsh speedwell*

Swamps. Common. May-September.

Veronica officinalis L.*Common speedwell*

Dry soil in fields and woods. Common. June-August.

Veronica serpyllifolia L.*Thyme-leaved speedwell*

Fields and thickets. Very common. May-July.

Veronica peregrina L.*Purslane speedwell*

An abundant weed in cultivated ground. June-September.

Veronica arvensis L.*Corn speedwell*

Woods, fields and cultivated ground. Common. May-August.

Veronica byzantina (S. & S.) B. S. P.**V. buxbaumii Tenore***Byzantine speedwell*

Waste places and gardens. Frequent. May-September.

Veronica spicata L.*Spiked speedwell*

Established in meadow lands near Apalachin. August.

Leptandra virginica (L.) Nutt.**Veronica virginica L.***Culver's root*

River flats. Common. June-August.

Dasystoma pedicularia (L.) Benth.**Gerardia pedicularia L.***Fern-leaved false foxglove*

Dry soil in woods and thickets. Frequent. August.

Dasystoma flava (L.) Wood**Gerardia flava L.***Downy false foxglove*

Dry, open woods and thickets. Common. July-August.

Dasystoma virginica (L.) Britton**Gerardia quercifolia Pursh***Smooth false foxglove*

Dry soil in woods and thickets. Frequent. July-August. This and the two preceding species are sometimes found growing together.

Gerardia tenuifolia Vahl*Slender gerardia*

Roadsides and coppices on hillsides. Frequent. August-September.

Pedicularis canadensis L.*Wood betony. Lousewort*

Dry, open thickets. Common. May-June.

Melampyrum lineare Lam.**M. americanum Michx.***Narrow-leaved cowwheat*

Dry woods and thickets. Common. June-August.

LENTIBULARIACEAE

Utricularia vulgaris L.*Common Bladderwort*

Still or sluggish waters. Common. July.

OROBANCHACEAE

Thalesia uniflora (L.) Britton**Aphyllon uniflorum Gray***Naked broom rape*

Dry thickets near Apalachin. May.

Leptamnium virginianum (L.) Raf.**Epiphegus virginiana Bart.***Beech drops*

Under beech trees. Frequent. September-October.

BIGNONIACEAE

Catalpa catalpa (L.) Karst.**C. bignonioides Walt.***Catalpa. Indian bean*Planted as a shade tree, but sometimes becomes spontaneous.
July.

ACANTHACEAE

Dianthera americana L.*Water willow*Common in the river from Smithboro westward, but not
found in the eastern part of our range. July-August.

PHRYMACEAE

Phryma leptostachya L.*Lopseed*

Woods and thickets. Frequent. July-August.

PLANTAGINACEAE

Plantago major L.*Common plantain*

Waste places. Common. Summer.

Plantago rugelii Dec.*Rugel's plantain*

Waste places. Common. Summer.

Plantago lanceolata L.*English plantain. Ribgrass*

Waste places and grass lands. Very common. May-October.

Plantago aristata Michx.

Recently introduced into a grain field and now spreading rapidly. June-September.

Plantago virginica L.*Dwarf plantain*

Meadows 1 mile south of Barton. Plentiful. May-June.

RUBIACEAE

Houstonia coerulea L.*Bluets. Innocence*

Meadows and pastures, specially in moist soil. Common. July.

Galium trifidum L.*Small bedstraw*

Bogs and cold swamps. Frequent. Summer.

CAPRIFOLIACEAE

Sambucus canadensis Michx.*Sweet elder*

Roadsides, fence rows and bottom lands. Common. July.

Sambucus pubens Michx.**S. racemosa** L.*Red-berried elder*

Moist soil in rocky woods. Common. May.

Viburnum alnifolium Marsh.**V. lantanoides** Michx.*Hobblebush*

Low woods. Frequent. May.

Viburnum opulus L.*High bush cranberry. Cramp bark*

Swamps near Barton. Infrequent. June.

Viburnum acerifolium L.*Maple-leaved arrowwood. Dockmackie*

Dry, rocky woods. Common. June.

Viburnum pubescens (Ait.) Pursh*Downy-leaved arrowwood*

Rocky woods. Common. June.

Viburnum dentatum L.*Arrowwood*

Borders of swamps. Common. June.

Viburnum cassinoides L.*Witherod. Appalachian tea*

Swamps and low ground. Common. June.

Viburnum lentago L.*Nannyberry. Sheepberry*

Low ground. Common. May.

Triosteum perfoliatum L.*Feverwort. Horse gentian*

Borders of woods, specially along the river. Frequent. June.

Linnaea borealis L.*Twin flower*

Damp, shrubby field near Apalachin. Rare. June.

Symphoricarpus racemosus Michx.*Snowberry*

Plentiful along the river banks at Barton, also frequent by roadsides where it has escaped from cultivation. June-August.

Lonicera dioica L.*L. glauca Hill**Glaucous honeysuckle*

Dry soil in thickets and along fences. Frequent. June.

Lonicera ciliata Muhl.

Fly honeysuckle

Moist woods. Common. May.

Lonicera tatarica L.

Tartarian bush honeysuckle

Roadsides. Escaped from cultivation. May.

Diervilla diervilla (L.) MacM.

D. trifida Moench

Bush honeysuckle

Dry, rocky, woodland roadsides and fence rows. Common.
June.

VALERIANACEAE

Valerianella chenopodifolia (Pursh) DC.

Goosefoot corn salad

Moist meadows along the river. Frequent. June-July.

Valerianella radiata (L.) Dufr.

Beaked corn salad

Bottom land at Barton. Frequent. June-July.

DIPSACACEAE

Dipsacus sylvestris Huds.

Card teasel

Waste places. Common. July-August.

CUCURBITACEAE

Micrampelis lobata (Michx.) Greene

Echinocystis lobata T. & G.

Wild balsam apple

River banks and waste places. Common. July-August.

Sicyos angulatas L.

Star cucumber

River banks and waste places. Common. July-September.

CAMPANULACEAE

Campanula rotundifolia L.

Harebell

Rocks near Barton. Rare. July-August.

Campanula rapunculoides L.*European bellflower*

Roadsides and about old dwellings. Common. July-September.

Campanula aparinoides Pursh*Marsh bellflower*

Wet, grassy places. Common. July-August.

Legouzia perfoliata (L.) Britton**Specularia perfoliata A. DC.***Venus looking-glass*

Fields, roadsides and in cultivated soil. Common. June.

Lobelia cardinalis L.*Cardinal flower*

Shores of streams. Common. July-August.

Lobelia syphilitica L.*Great lobelia*

Wet meadows and borders of swamps. Frequent. August.

Lobelia spicata Lam.*Spiked lobelia*

Meadows and pastures. Common. July.

Lobelia inflata L.*Indian tobacco*

Fields and thickets. Common. July.

CICHORIACEAE

Cichorium intybus L.*Chicory*

Fields and roadsides. Frequent. August.

Tragopogon pratensis L.*Goat's beard*

Frequent along railroads. Summer.

Tragopogon porrifolius L.*Oyster plant. Salsify*

Escapes from cultivation. Summer.

Taraxacum taraxacum (L.) Karst.**T. officinale Weber***Dandelion*

Fields and waste places. Very common. April-December.

Taraxacum erythrospermum Andrz.*Red-seeded dandelion*

Fields and waste places. Common. Easily distinguished from the last by its brownish red seeds.

Sonchus oleraceus L.*Annual sow thistle*

Waste places, specially along railroads. Common. June-October.

Sonchus asper (L.) All.*Spiny sow thistle*

With the last. Common. June-October.

Lactuca virosa L.*Prickly lettuce*

Waste places. Common. August-September. A very troublesome weed, which is fast spreading.

Lactuca canadensis L.*Tall lettuce*

Thickets and fence rows. Common. July-September.

Lactuca villosa Jacq.**L. acuminata Gray***Blue lettuce*

Thickets. Frequent. August.

Lactuca spicata (Lam.) Hitch.**L. leucophaea Gray***Tall blue lettuce*

Moist soil. Common. August-September.

Hieracium aurantiacum L.*Orange hawkweed. Paint brush*

Fields. It often forms dense patches. Common. June-September.

Hieracium praealtum Vill.*King devil*

In a meadow near Apalachin. Rare. June-August.

Hieracium venosum L.*Rattlesnake weed*

Dry woods and thickets. Common. June-August.

Hieracium canadense Michx.*Canada hawkweed*

Dry woods and thickets. Frequent. August.

Hieracium paniculatum L.*Panicled hawkweed*

Dry, open woods. Common. August.

Hieracium scabrum Michx.*Rough hawkweed*

Dry soil in woods and clearings. Common. August.

Nabalus altissimus (L.) Hook.**Prenanthes altissima** L.*Tall white lettuce*

Woods and thickets. Common. August-October.

Nabalus albus (L.) Hook.**Prenanthes alba** L.*White lettuce. Rattlesnake root*

Thickets and borders of woods. Common. August-September.

Nabalus serpentarius (Pursh) Hook.**Prenanthes serpentaria** Pursh*Lion's foot. Gall-of-the-earth*

Thickets and open woods. Common. August-September.

AMBROSIACEAE

Ambrosia trifida L.*Great ragweed*

Abundant along the river banks. August-September.

Ambrosia trifida integrifolia (Muhl.) T. & G.

With the type. Frequent.

Ambrosia artemisiaefolia L.*Ragweed. Hogweed*

Cultivated soil and waste places. A very common weed.
August-September.

Xanthium canadense Mill.*American cocklebur*

River banks, along streams and in waste places. Common.
August-September.

Xanthium strumarium L.*Bur weed*

Waste places. Occasional. August-September.

COMPOSITAE

Eupatorium purpureum L.*Trumpetweed. Gravelroot*

Moist soil. Common. August-September.

Eupatorium purpureum falcatum (Michx.) Britton

With the type, specially along the river.

Eupatorium perfoliatum L.*Boneset. Thoroughwort*

Wet places. Common. August-September.

Eupatorium perfoliatum truncatum (Muhl.) Gray

Vicinity of Apalachin. Infrequent.

Eupatorium ageratoides L.f.*White snakeroot*

Woods and thickets. Common. Occasional in shaded places
near dwellings. August-September.

Solidago squarrosa Muhl.*Stout ragged goldenrod*

Dry, rocky soil on hilltops and along roadsides. Common.
September.

Solidago caesia L.*Blue-stemmed goldenrod*

Woods and thickets. Common. August-September.

Solidago caesia axillaris (Pursh) Gray

Woods and thickets. Common.

Solidago flexicaulis L.*S. latifolia* L.*Broad-leaved goldenrod*

Rich, moist woods and thickets. Common. August-September.

Solidago bicolor L.*White goldenrod*

Thickets and roadsides. Common. August-September.

Solidago hispida Muhl.*S. bicolor* var. *concolor* T. & G.*Hairy goldenrod*

Dry soil in thickets. Frequent. August-September.

Solidago rugosa Mill.*Rough goldenrod*

Fields, fence rows and roadsides. Very common. August-September.

Solidago patula Muhl.*Rough-leaved goldenrod*

Swamps at Apalachin and Barton. Infrequent. September.

Solidago ulmifolia Muhl.*Elm-leaved goldenrod*

Woods, coppices and dry slopes. Infrequent. August-September.

Solidago juncea Ait.*Early goldenrod*

Dry, rocky soil of fields and banks. Common. July. This is our earliest blooming species and is sometimes found in flower late in June.

Solidago arguta Ait.*Cut-leaved goldenrod*

Moist thickets. Frequent. July-September.

Solidago serotina Ait.*Smooth goldenrod*

Moist soil. Common. August-September.

Solidago serotina gigantea (Ait.) Gray

With the type and nearly as common. August-September.

Solidago canadensis L.*Canada goldenrod*

Old fields, fence rows and roadsides. Abundant. August-September.

Solidago nemoralis Ait.*Field goldenrod*

Poor, rocky soil in old fields. Very common. August-September.

Euthamia graminifolia (L.) Nutt.**Solidago lanceolata L.***Narrow-leaved goldenrod*

Fields and roadsides. Very common. August.

Sericocarpus asteroides (L.) B. S. P.**S. conyzoides Nees***White-topped aster*

Dry woods. Frequent. August.

Aster divaricatus L.**A. corymbosus Ait.***White wood aster*

Open woodland and thickets. Common. September.

Aster curvescens Burgess*Dome-topped aster*

Moist, shaded soil. Common. September.

Aster macrophyllus L.*Large-leaved aster*

Woods and thickets. Common. August. A species having many different forms.

Aster ianthinus Burgess*Violet wood aster*

Wooded banks and paths. Frequent. August-September.

Aster cordifolius L.*Common blue wood aster*

Open woods, fence rows, thickets and specially along woodland roads. Common. September-November.

Aster cordifolius polycephalus Porter

With the type. Occasional.

Aster lowrieanus Porter

Lowrie's aster

Woods. Common. September-October.

Aster lowrieanus lancifolius Porter

With the type.

Aster undulatus L.

Wavy-leaf aster

Dry soil. Common. September.

Aster undulatus loriformis Burgess

With the type. Common. September.

Aster patens Ait.

Late purple aster

Dry, open places. Frequent. September.

Aster novae-angliae L.

New England aster

Fields and fence rows. Common. August-September. A splendid species.

Aster puniceus L.

Purple-stem aster

Swamps and wet places. Common. September.

Aster puniceus firmus (Nees) T. & G.

Aster puniceus var. *laevicaulis* Gray

With the type. Frequent. September.

Aster prenanthoides Muhl.

Crooked-stem aster

Moist soil. Common. September-October.

Aster laevis L.

Smooth aster

Borders of woods and thickets. Common. September. A beautiful species.

Aster acuminatus Michx.

Mountain aster

Moist woods. Common. August-September.

Aster paniculatus Lam.*Tall white aster*

Moist soil. Common. September.

Aster ericoides L.*White heath aster*

Dry soil. Common. September-November.

Aster lateriflorus (L.) Britton**A. diffusus** Ait.*Starved aster*

Fields, roadsides and thickets. Common. September.

Aster vimineus Lam.*Small white aster*

Borders of thickets. Frequent. September.

Erigeron pulchellus Michx.**E. bellidifolius** Muhl.*Robin's plantain*

Banks. Common. May.

Erigeron philadelphicus L.*Philadelphia fleabane*

Moist, grassy fields and woods. Common. May-June.

Erigeron annuus (L.) Pers.*Sweet scabious*

Fields and roadsides. Common. May-October.

Erigeron ramosus (Walt.) B. S. P.**E. strigosus** Muhl.*Daisy fleabane*

A common weed in meadows. June-September.

Leptilon canadense (L.) Britton**Erigeron canadensis** L.*Canada fleabane. Horsecweed*

A very common weed in fields and waste places. July-September.

Doellingeria umbellata (Mill.) Nees**Aster umbellatus** Mill.*Tall flat-top white aster*

Moist soil near Apalachin. August.

Doellingeria infirma (Michx.) Greene*Aster infirmus* Michx.*Cornel-leaved aster*

Dry, rocky soil in woods and thickets. Frequent. August-September.

Antennaria neglecta Greene*Field cat's-foot*

Pastures. Common. April-May.

Antennaria plantaginifolia (L.) Richards.*Plantain-leaf everlasting*

Woods and old fields. Common. April-May.

Anaphalis margaritacea (L.) B. & H.*Pearly everlasting*

Old fields. Common. August.

Gnaphalium obtusifolium L.*G. polycephalum* Michx.*White balsam*

Dry, open places. Common. August.

Gnaphalium decurrens Ives*Clammy everlasting*

Dry, open places. Common. August.

Gnaphalium uliginosum L.*Low cudweed*

Damp soil, specially along roadsides. Common. August.

Inula helenium L.*Elecampane*

Fields, roadsides and along streams in woods. Common. August.

Polymnia canadensis L.*Small-flowered leafcup*

"Hog back" near Apalachin. Rare. August.

Heliopsis helianthoides (L.) B. S. P.*H. laevis* Pers.*Oxeye*

Common on the banks of the river and along streams. August.

Rudbeckia hirta L.*Black-eyed susan. Yellow daisy*

Meadows and pastures. Common. June-August.

Rudbeckia laciniata L.*Tall coneflower*

Damp soil in thickets. Common. July-August.

Helianthus annuus L.*Common sunflower*

Waste places. Frequent. August.

Helianthus divaricatus L.*Rough sunflower*

Dry thickets. Common. July-August.

Helianthus decapetalus L.*Thin-leaved sunflower*

Along the river and in moist woods. Common. August-September.

Helianthus strumosus L.*Wood sunflower*

Plentiful in a thicket near Apalachin. August-September.

Helianthus tuberosus L.*Jerusalem artichoke*

River banks and waste places. Common. September. Apparently indigenous in the river valley.

Bidens laevis (L.) B. S. P.**B. chrysanthemoides Michx.***Larger bur marigold*

Swamps, ditches and wet meadows. Common. August-September.

Bidens cernua L.*Smaller bur marigold*

Wet soil. Common. August-September.

Bidens connata Muhl.*Swamp beggar ticks*

Swamps and moist soil. Common. August-September.

Bidens frondosa L.*Beggar ticks. Stick-tight*

Damp soil in fields. Very common. August-September.

Galinsoga parviflora Cav.*Galinsoga*

Dooryards and waste places at Owego and Waverly. Plentiful. August-September.

Helenium autumnale L.*Sneezeweed*

Banks of the river, along streams and in swamps. Common. September-October.

Achillea millefolium L.*Yarrow. Milfoil*

Fields, pastures and roadsides. Common. June-September.

Anthemis cotula L.*Mayweed*

Fields, waste places and roadsides. Common. June-September.

Anthemis arvensis L.*Corn camomile*

Fields, specially on the river flats. Common. May-June.

Chrysanthemum leucanthemum L.*White daisy*

Meadows and fields. Abundant. May-August.

Chrysanthemum parthenium (L.) Pers.*Common feverfew*

Frequent in waste places at Apalachin. Summer. Escapes from cultivation in gardens.

Tanacetum vulgare L.*Tansy*

Fields, roadsides and along streams. Common. August-September.

Artemisia absinthium L.*Wormwood*

Waste places at Barton. July-September.

Artemisia vulgaris L.*Common mugwort*

Waste places at Barton. July-September.

Tussilago farfara L.*Coltsfoot*

Moist soil by roadsides. Infrequent. April-May.

Erechtites hieracifolia (L.) Raf.*Fireweed*

Woodland and thickets, specially in recent clearings and burnt districts. Common. August-September.

Synosma suaveolens (L.) Raf.*Cacalia suaveolens L.**Sweet-scented Indian plantain*

Alluvial soil and woods along the river. Frequent. September.

Senecio aureus L.*Golden ragwort. Liferoot*

Swamps, wet meadows and along streams. Common. May-June.

Arctium lappa L.*Burdock*

Waste places. Frequent. July-September.

Arctium minus Schk.*Common burdock*

Waste places, specially about dwellings. Common. July-October.

Carduus lanceolatus L.*Cnicus lanceolatus Hoffm.**Common bur thistle*

Fields and waste places. Common. July-October.

Carduus discolor (Muhl.) Nutt.*Cnicus altissimus var. discolor Gray**Field thistle*

Plentiful in fields along the river. July-October.

Carduus odoratus (Muhl.) Porter

Cnicus pumilus Torr.

Pasture thistle. Fragrant thistle

Fields. Frequent. July-August.

Carduus muticus (Michx.) Pers.

Cnicus muticus Pursh

Swamp thistle

Swamps and along streams. Common. August.

Carduus arvensis (L.) Robs.

Cnicus arvensis Hoffm.

Canada thistle

Abundant in fields and waste places. July-September.

EXPLANATION OF PLATES

PLATE M

Hygrophorus subrufescens Pk.

REDDISH HYGROPHORUS

- 1, 2 Two plants with convex cap
- 3, 4 Two plants with margin of cap curved upward
- 5 Vertical section of the upper part of a mature plant
- 6 Four spores $\times 400$

Collybia uniformis Pk.

UNIFORM COLLYBIA

- 7 Cluster of four plants growing from the upper surface of a piece of wood, two of them young, two mature
- 8 Cluster of three mature plants growing from the lateral surface of a piece of wood
- 9-11 Three mature plants, one with curved stem
- 12 Vertical section of the upper part of a mature plant with fully expanded cap
- 13 Transverse section of a stem
- 14 Vertical section of the upper part of a plant with convex cap
- 15 Transverse section of a compressed stem
- 16 Four spores $\times 400$

Myceena rugosoides Pk.

WRINKLED MYCENA

- 17-19 Three plants with dark brown caps, two moist, one dry,
two with caps umbonate
- 20 Vertical section of the upper part of a plant
- 21 Transverse section of a stem
- 22 Four spores $\times 400$
- 23-25 Three plants with grayish brown caps, one moist, two
dry, two with caps umbonate
- 26 Vertical section of the upper part of a plant
- 27 Transverse section of a stem
- 28 Four spores $\times 400$
- 29-31 Three plants with whitish caps, one moist, two dry, two
with caps umbonate
- 32 Vertical section of the upper part of a plant
- 33 Transverse section of a stem
- 34 Four spores $\times 400$

Flammula pusilla Pk.

SMALL FLAMMULA

- 35, 36 Two immature plants
- 37 Mature plant with convex cap
- 38 Mature plant with plane cap
- 39 Vertical section of the upper part of an immature plant
- 40 Vertical section of the upper part of a mature plant
- 41 Four spores $\times 400$

PLATE N

Russula magnifica Pk.

MAGNIFICENT RUSSULA

- 1 Small immature plant
- 2 Mature plant of medium size
- 3 Vertical section of the upper part of a mature plant
- 4 Four spores $\times 400$

Russula earlei Pk.

EARLE'S RUSSULA

- 5 Immature plant
- 6, 7 Mature plants with convex caps
- 8 Mature plant with cap nearly plane
- 9 Vertical section of the upper part of a plant
- 10 Four spores $\times 400$

PLATE 82

Tricholoma silvaticum Pk.

WOOD TRICHOLOMA

- 1, 2 Two plants with umbonate caps
- 3 Plant with convex cap
- 4 Plant with plane cap
- 5 Vertical section of the upper part of a plant
- 6 Four spores $\times 400$

Tricholoma subacutum Pk.

SUBACUTE TRICHOLOMA

- 7 Immature plant with grayish brown cap
- 8 Mature plant with grayish brown cap
- 9-11 Three plants with blackish brown fibrillose caps
- 12 Vertical section of the upper part of an immature plant
- 13 Vertical section of the upper part of a mature plant
- 14 Four spores $\times 400$

Tricholoma radicatum Pk.

ROOTED TRICHOLOMA

- 15, 16 Two plants with smoothish caps
- 17 Plant with minutely scaly cap
- 18 Vertical section of the upper part of a plant
- 19 Four spores $\times 400$

PLATE 83

Hygrophorus pudorinus Fr.

BLUSHING HYGROPHORUS

- 1 Cluster of four young plants
- 2 Mature plant with convex cap
- 3 Mature plant with slightly umbonate cap
- 4 Vertical section of the upper part of a young plant
- 5 Vertical section of the upper part of a mature plant
- 6 Four spores $\times 400$

Lactarius luteolus Pk.

YELLOWISH LACTARIUS

- 7 Immature plant
- 8 Mature plant with even cap
- 9 Mature plant with cap rugose
- 10 Vertical section of the upper part of a plant
- 11 Four spores $\times 400$

Lactarius subdulcis Fr.

SWEET LACTARIUS

- 12 Immature plant
- 13-15 Mature plants, two having caps with a small umbo
- 16 Mature plant with margin of cap wavy
- 17 Vertical section of the upper part of a plant
- 18 Transverse section of a stem
- 19 Four spores $\times 400$

Lactarius subdulcis oculatus Pk.

EYE-SPOT LACTARIUS

- 20 Immature plant
- 21, 22 Mature plants
- 23 Vertical section of the upper part of a plant
- 24 Four spores $\times 400$

PLATE 84

Russula crustosa Pk.

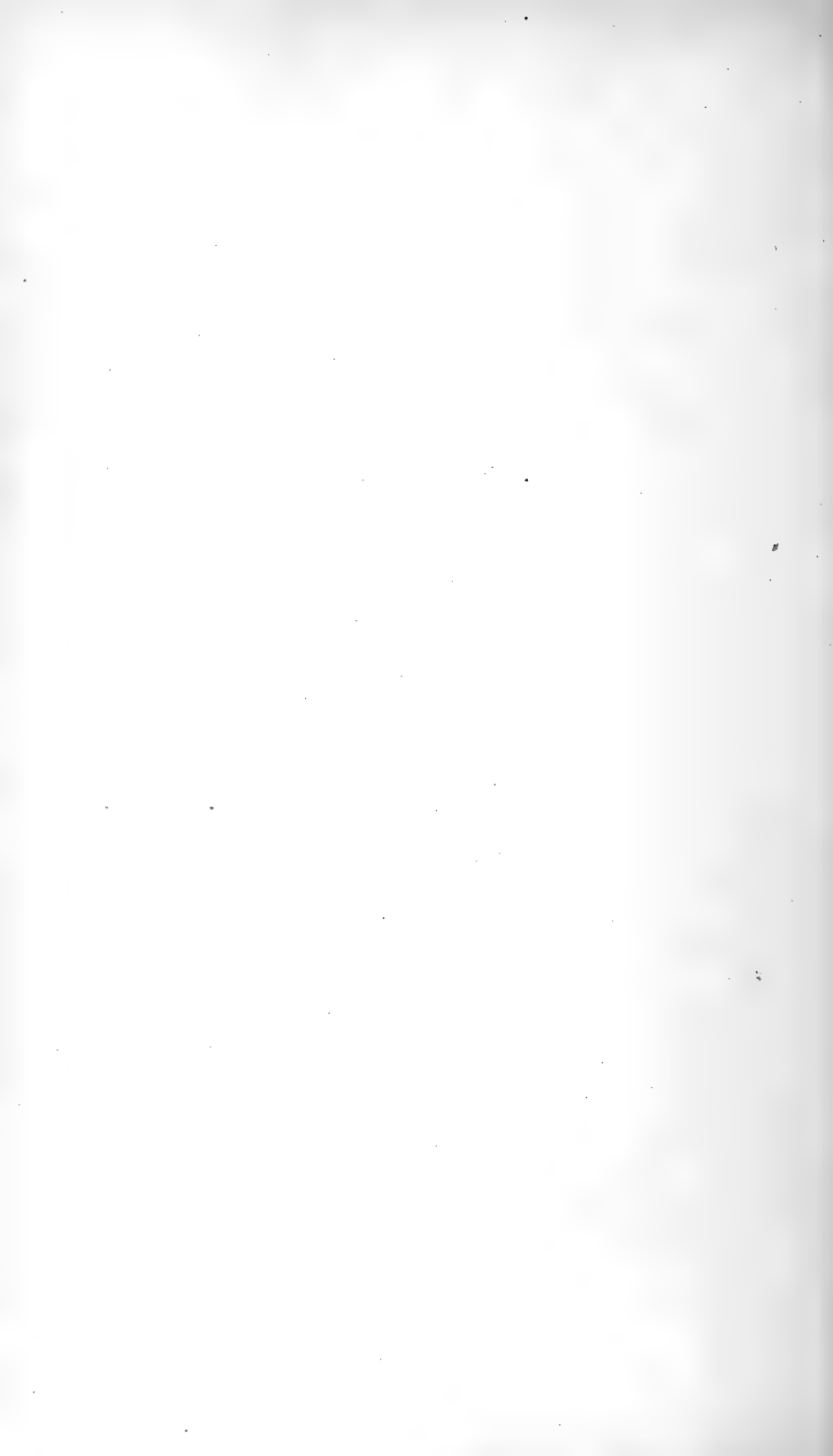
CRUSTED RUSSULA

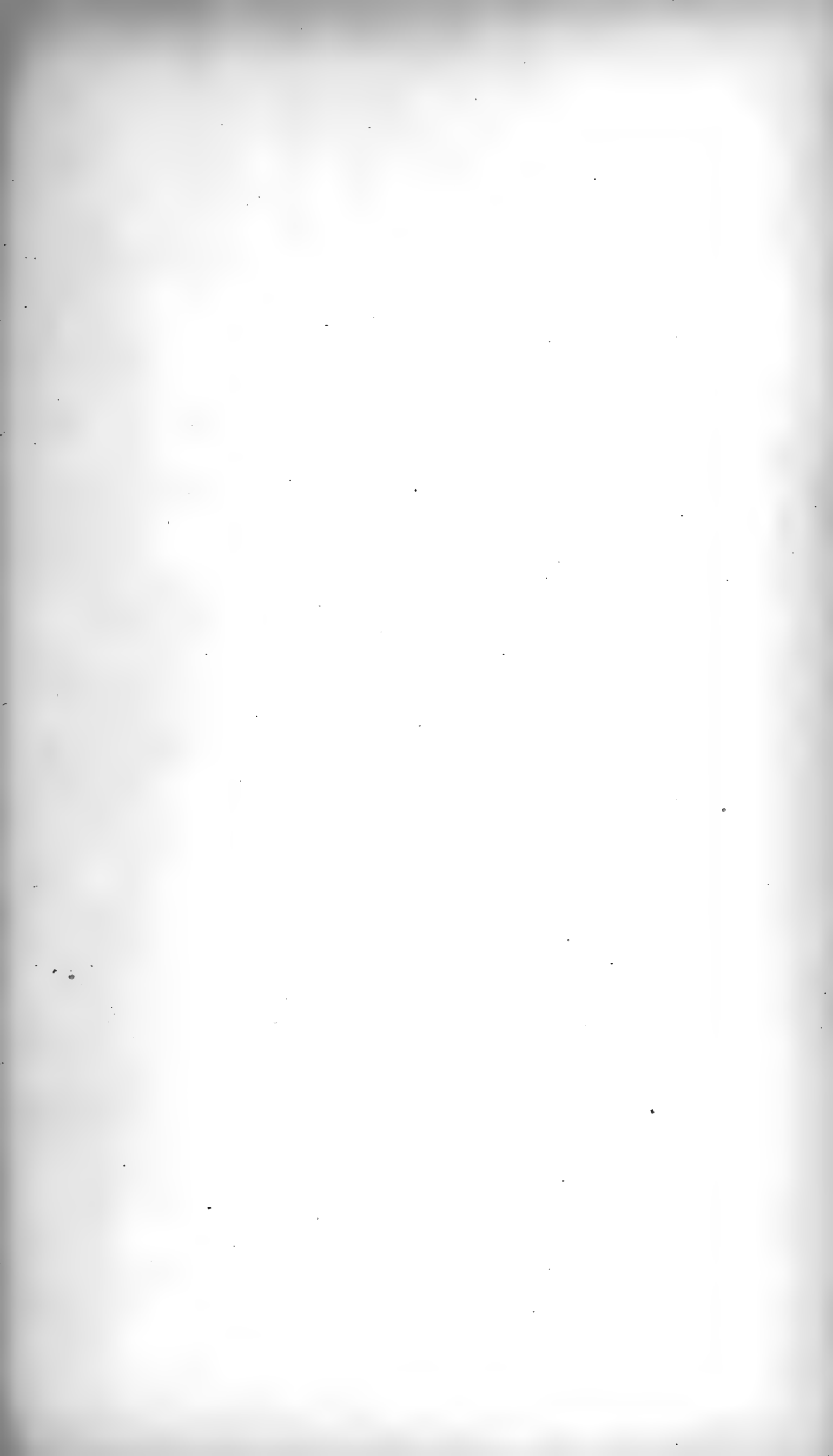
- 1 Immature plant
- 2 Mature plant with striated margin of cap
- 3 Mature plant with even margin of cap tinged with green
- 4 Mature plant with plane cap
- 5 Vertical section of the upper part of a young plant
- 6 Vertical section of the upper part of a mature plant
- 7 Four spores $\times 400$

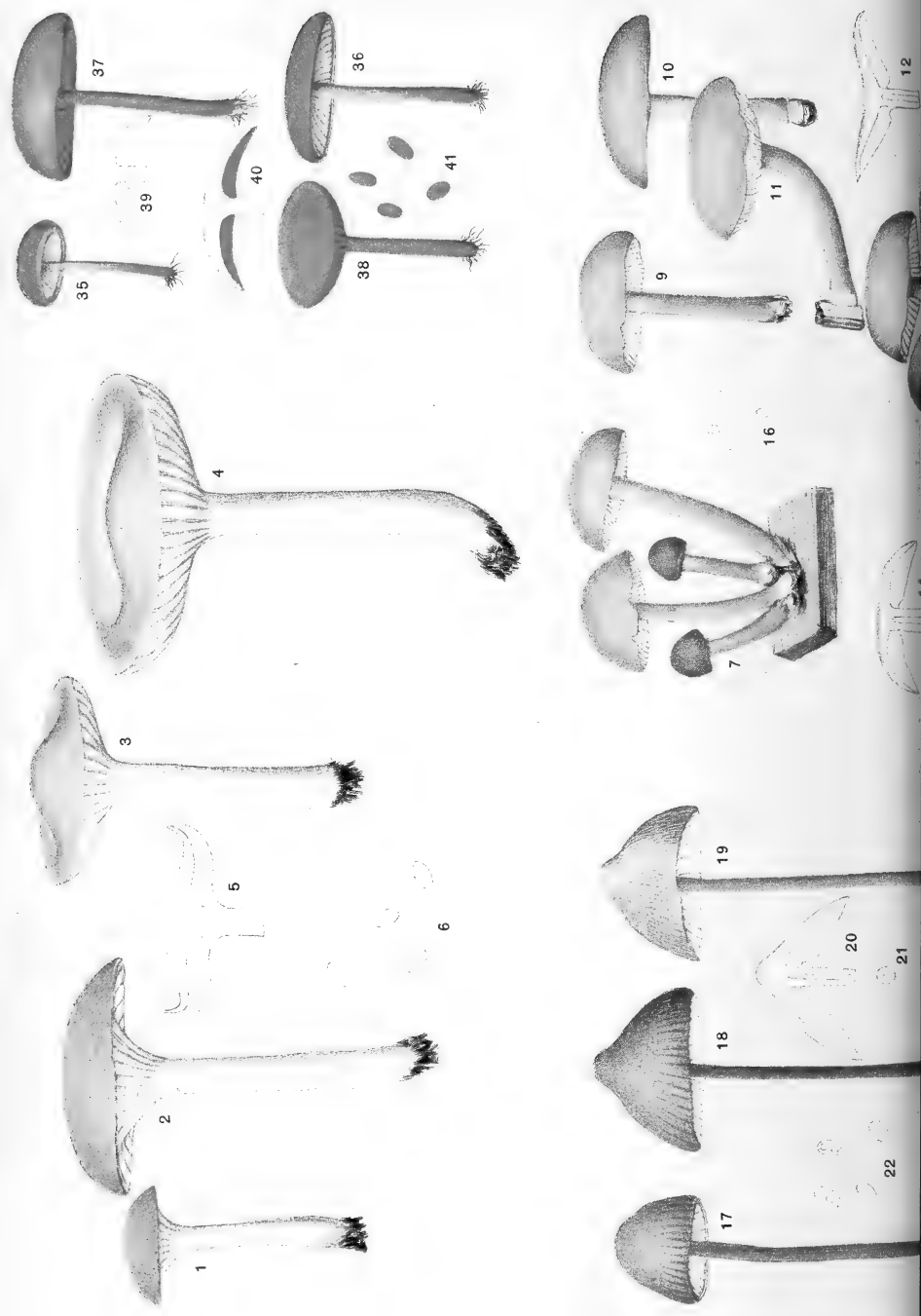
Cantharellus dichotomus Pk.

FORKED CHANTARELLE

- 8-10 Three plants with dark gray umbonate caps, two of them with reddish stains on the stems
- 11, 12 Two plants with pale gray caps, one with a small umbo
- 13 Plant with a grayish brown, wavy, margined cap
- 14, 15 Vertical sections of the upper part of two plants
- 16 Four spores $\times 400$
- 17-20 Four plants with short stems
- 21 Diagrammatic representation of the forking of the gills







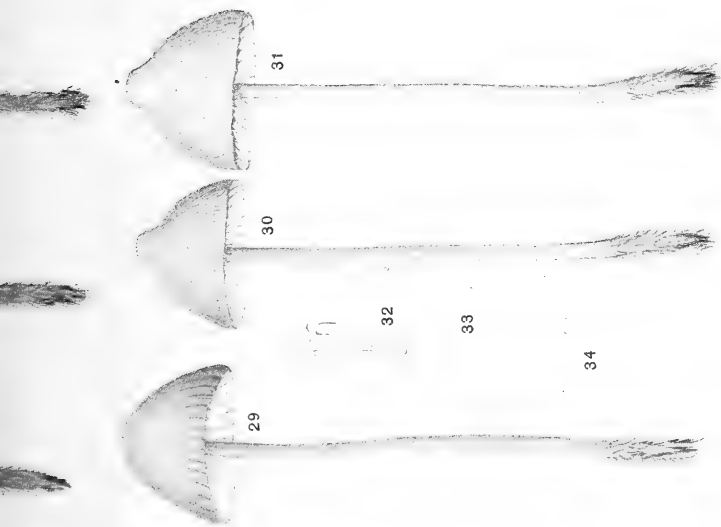


FIG. 1-6 *HYGROPHORUS SUBRUFESCENS* PK.
REDDISH *HYGROPHORUS*

FIG. 17-34 *MYCENA RUGOSOIDES* PK.
WRINKLED *MYCENA*

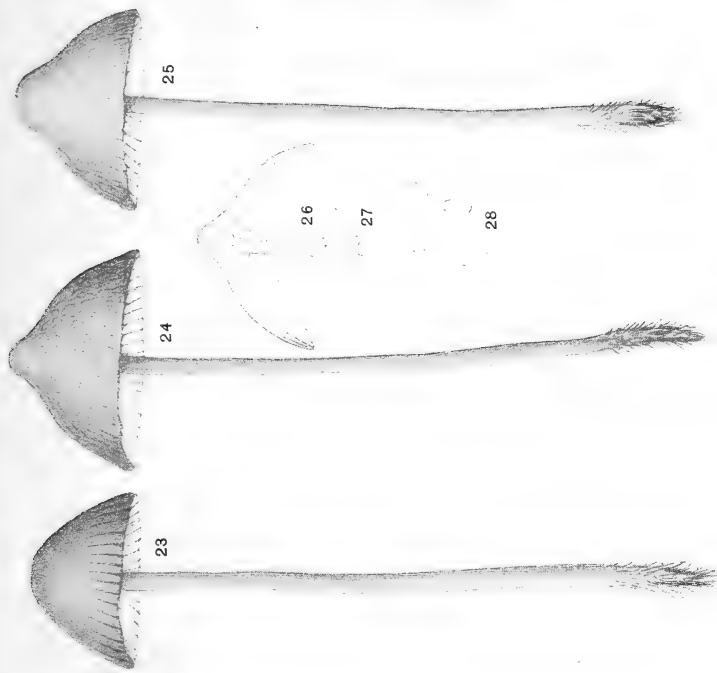


FIG. 7-16 *COLLYBIA UNIFORMIS* PK.
UNIFORM *COLLYBIA*

FIG. 35-41 *FLAMMULA PUSILLA* PK.
SMALL *FLAMMULA*

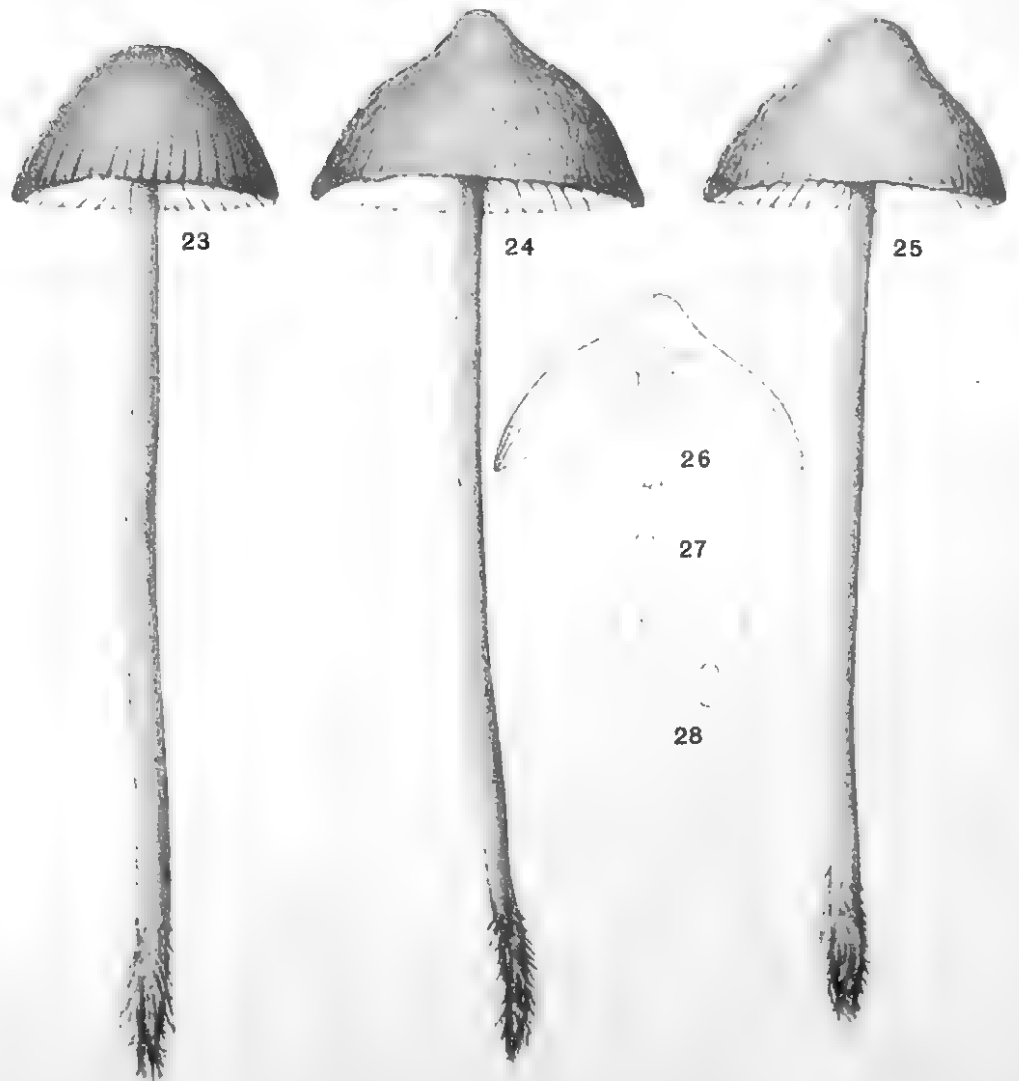
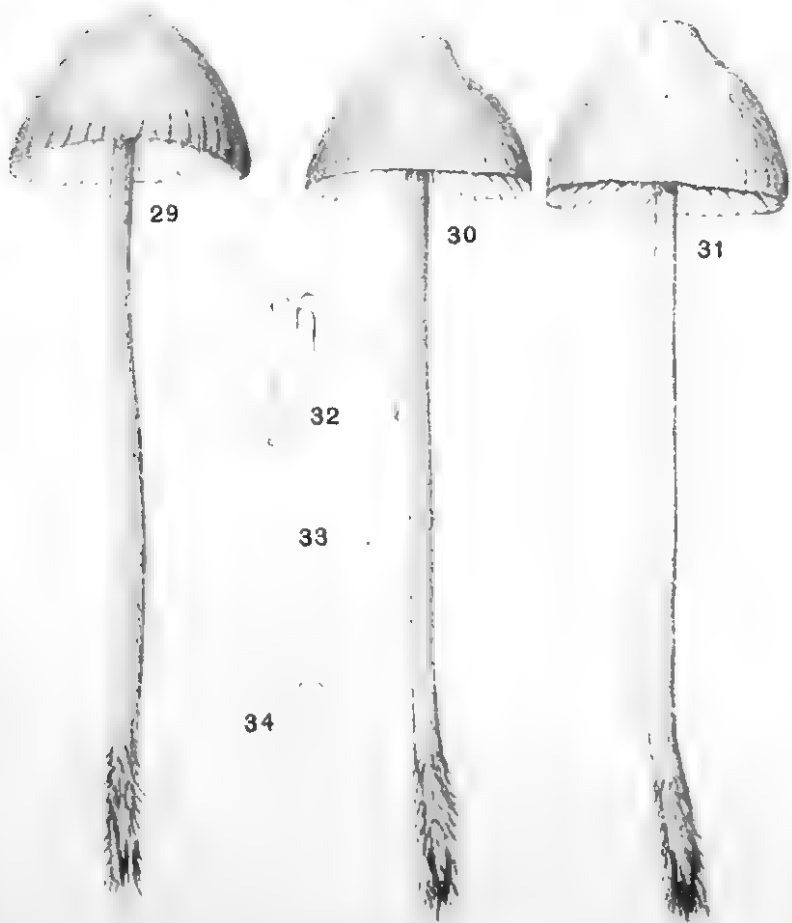


FIG. 1-6 *HYGROPHORUS SUBRUFESCENS* PK.
REDDISH *HYGROPHORUS*

FIG. 17-34 *MYCENA RUGOSOIDES* PK.
WRINKLED *MYCENA*

FIG. 7-16 *COLLYBIA UNIFORMIS* PK.
UNIFORM *COLLYBIA*

FIG. 35-41 *FLAMMULA PUSILLA* PK.
SMALL *FLAMMULA*



FIG. 1-4 RUSSULA MAGNIFICA PK.
MAGNIFICENT RUSSULA

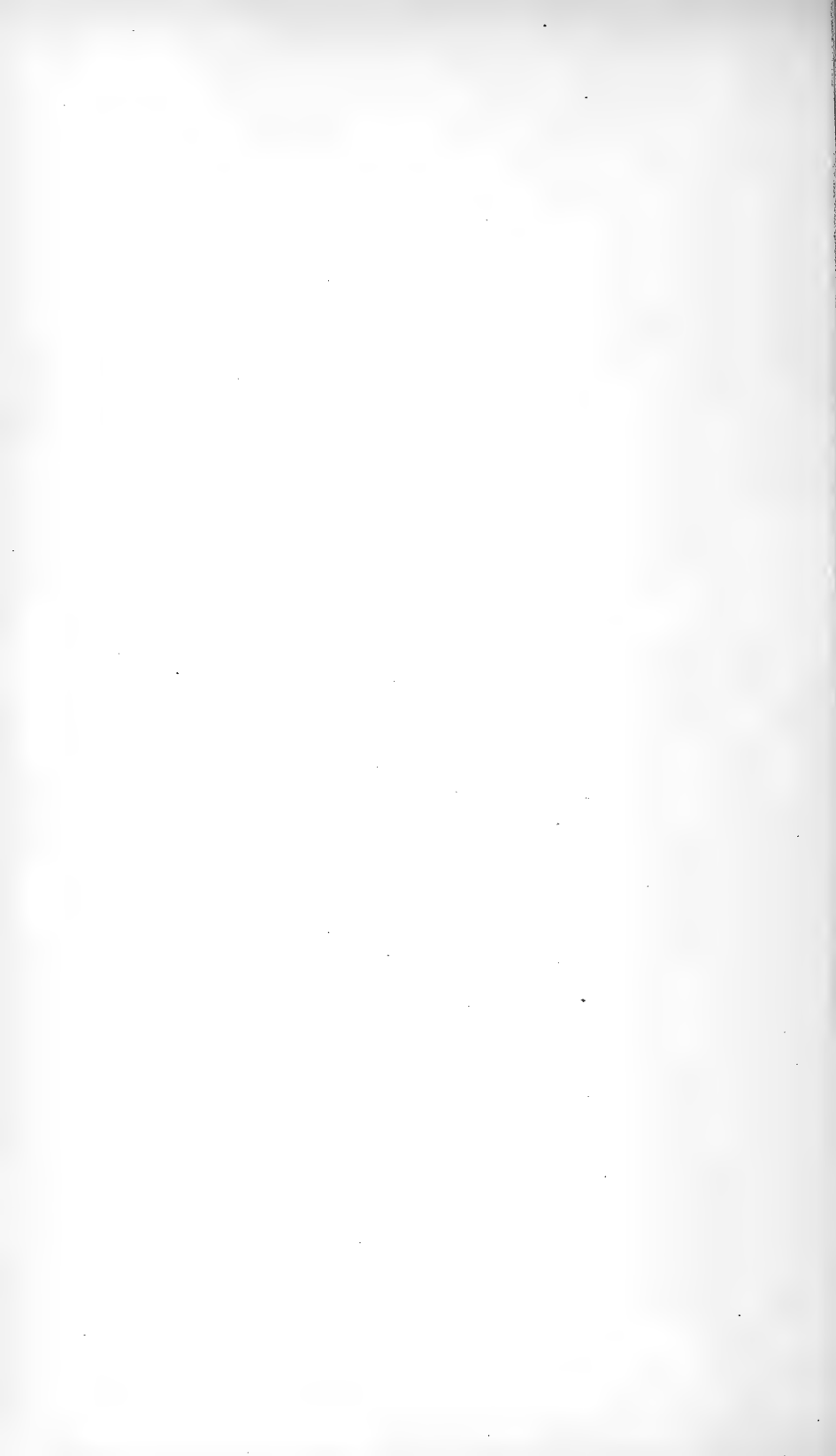
FIG. 5-10 RUSSULA EARLEI PK.
EARLE'S RUSSULA





FIG. 1-4 *RUSSULA MAGNIFICA* PK.
MAGNIFICENT RUSSULA

FIG. 5-10 *RUSSULA EARLEI* PK.
EARLE'S RUSSULA



EDIBLE FUNGI

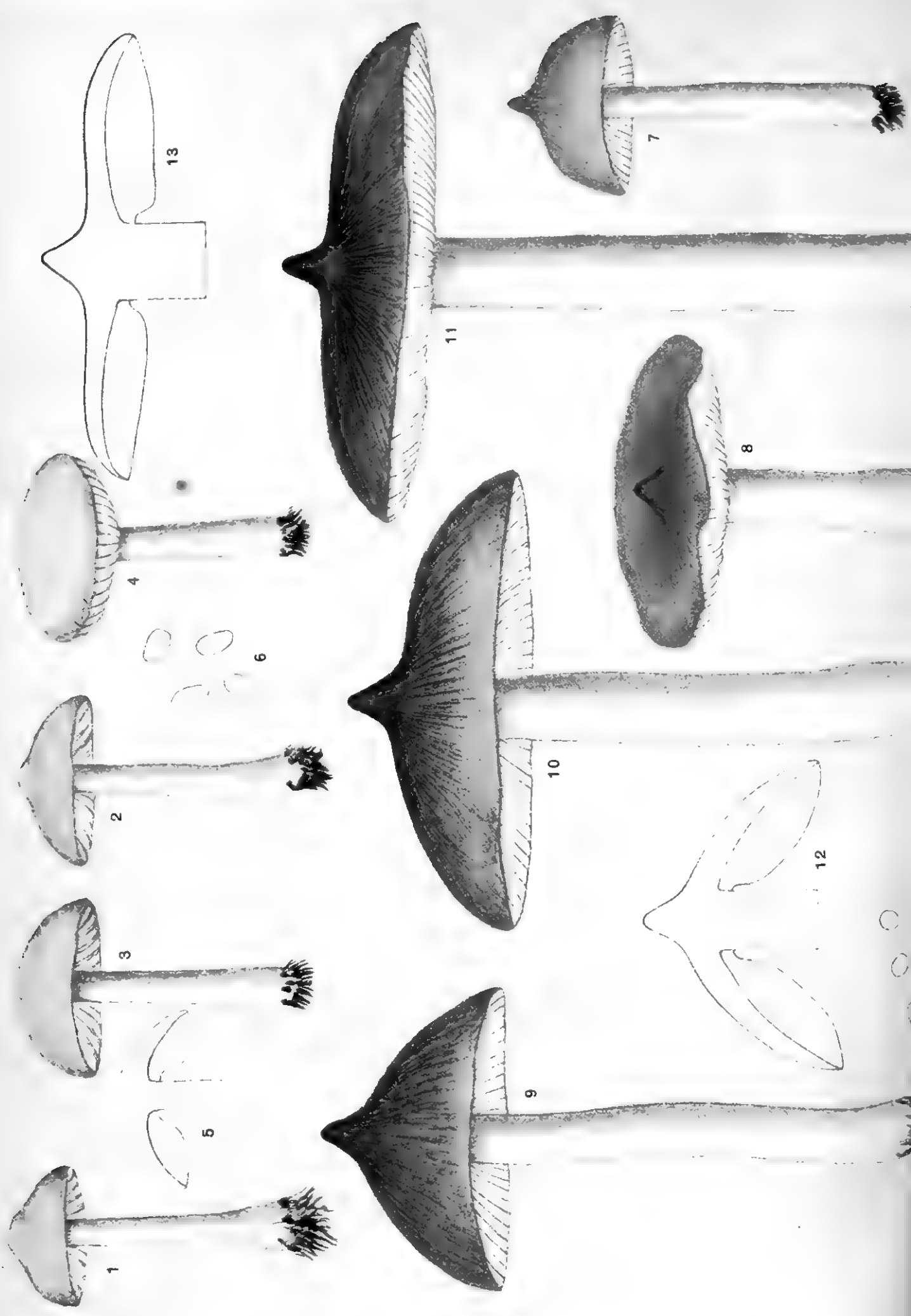




FIG. 1-6 *TRICHOLOMA SILVATICUM* PK.
WOOD *TRICHOLOMA*

FIG. 7-14 *TRICHOLOMA SUBACUTUM* PK.
SUBACUTE *TRICHOLOMA*

FIG. 15-19 *TRICHOLOMA RADICATUM* PK.
ROOTED *TRICHOLOMA*

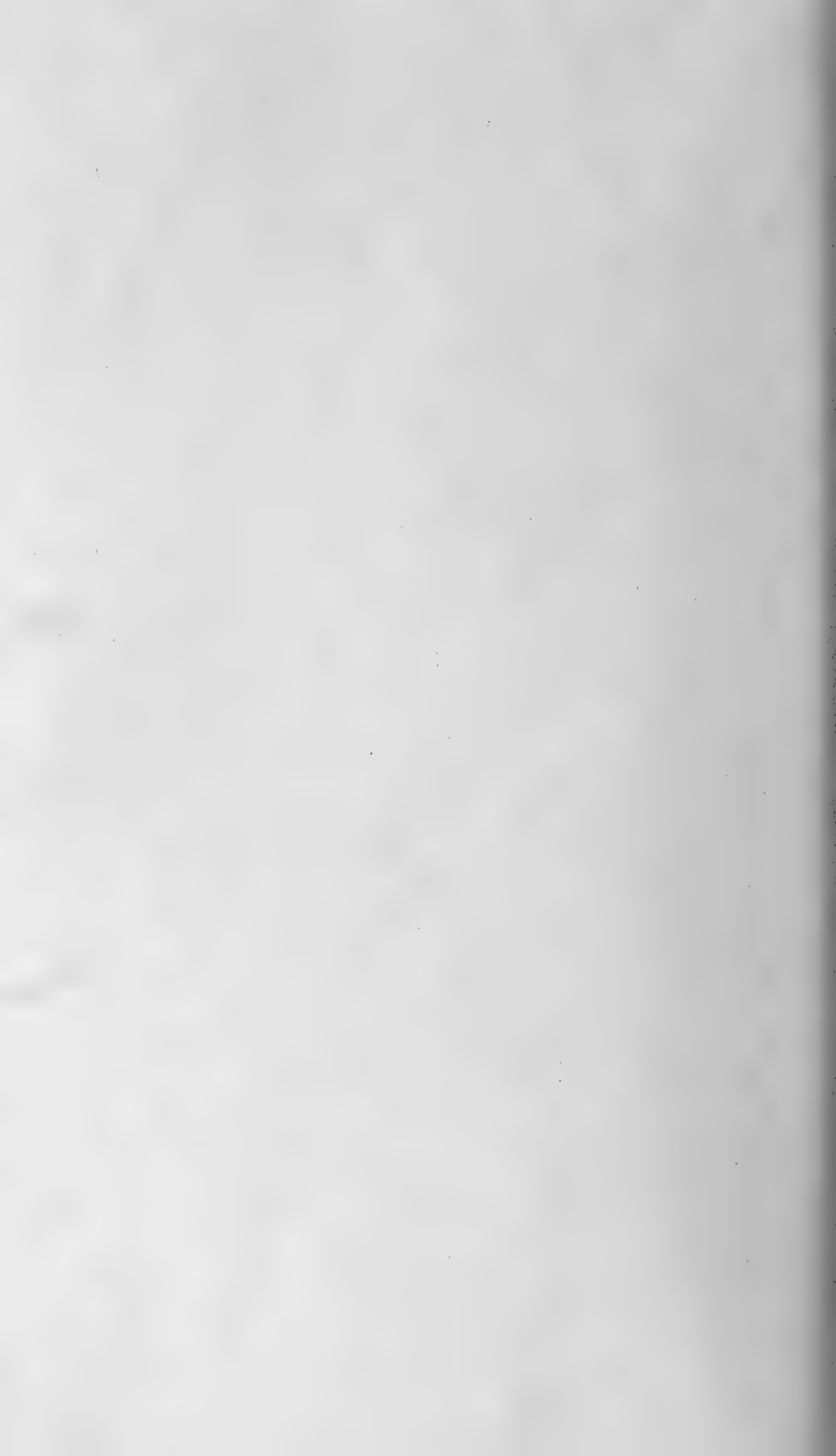
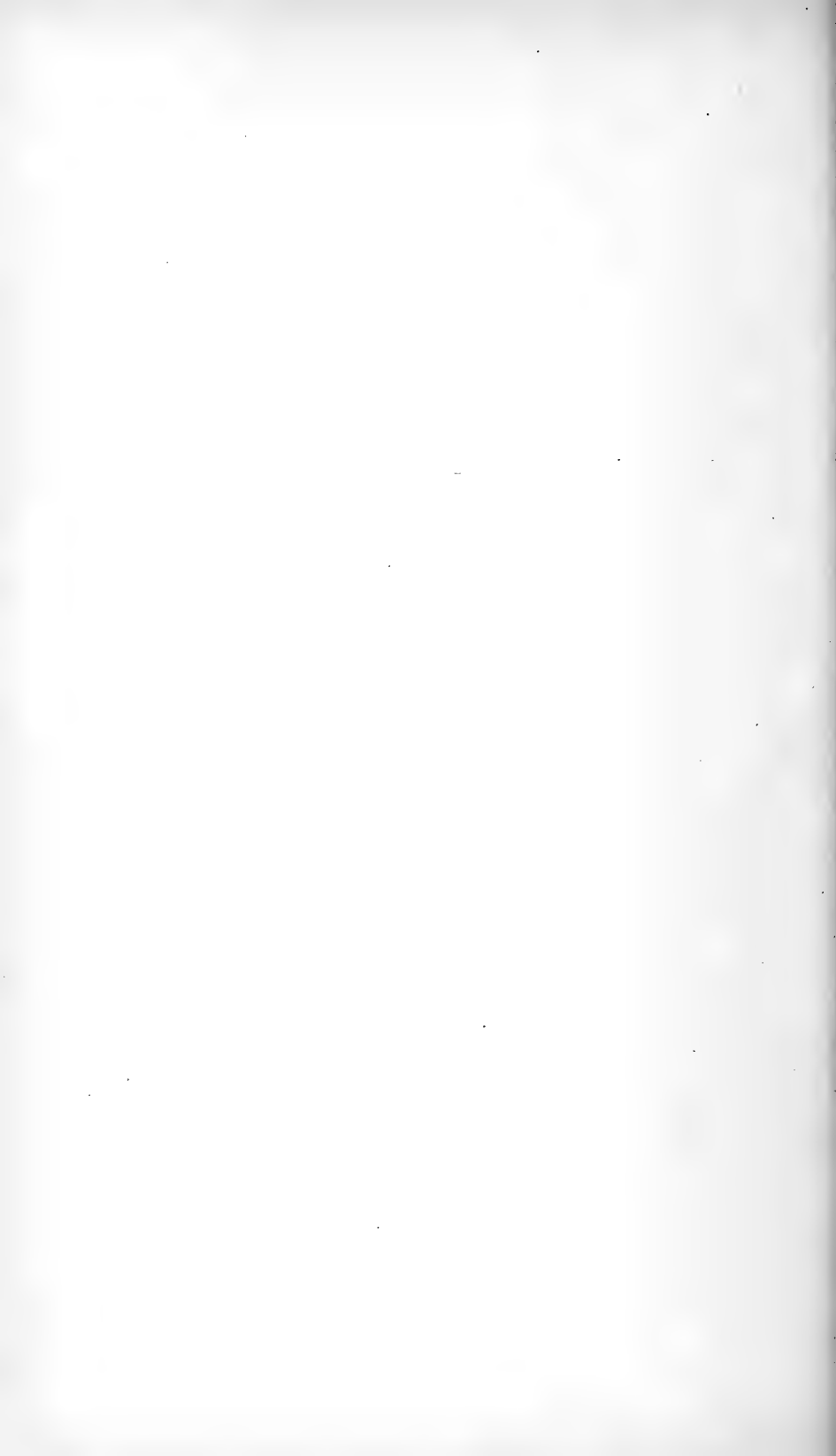




FIG. 1-6 *TRICHOLOMA SILVATICUM* PK.
WOOD TRICHOLOMA

FIG. 7-14 *TRICHOLOMA SUBACUTUM* PK.
SUBACUTE TRICHOLOMA

FIG. 15-19 *TRICHOLOMA RADICATUM* PK.
ROOTED TRICHOLOMA



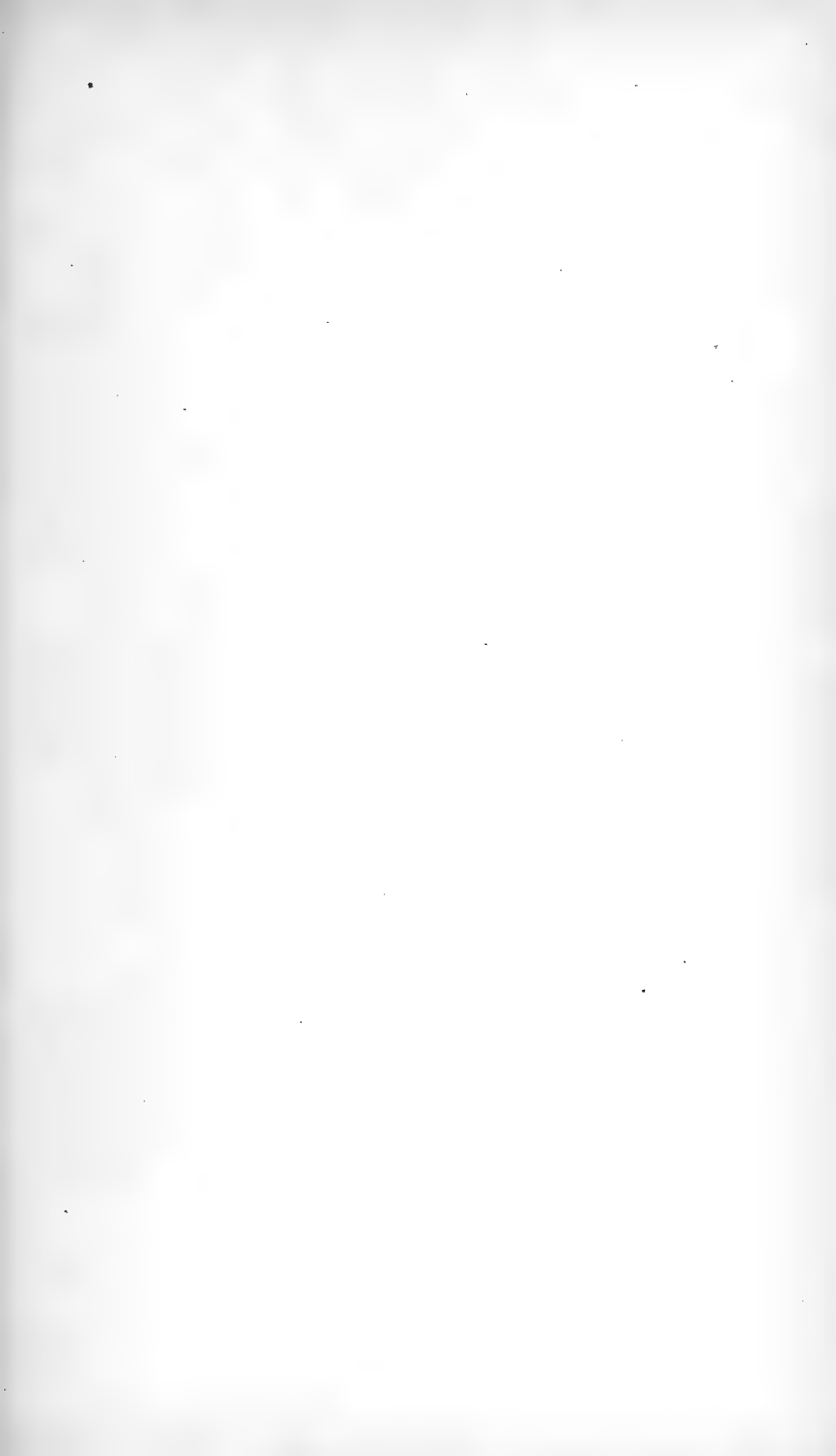






FIG 1-6 HYGROPHORUS PUDORINUS FR.
BLUSHING HYGROPHORUS

FIG. 12-19 LACTARIUS SUBDULCIS FR.
SWEET LACTARIUS

FIG. 7-11 LACTARIUS LUTEOLUS PK.
YELLOWISH LACTARIUS

FIG. 20-24 LACTARIUS SUBDULCIS OCULATUS PK.
EYE SPOT LACTARIUS

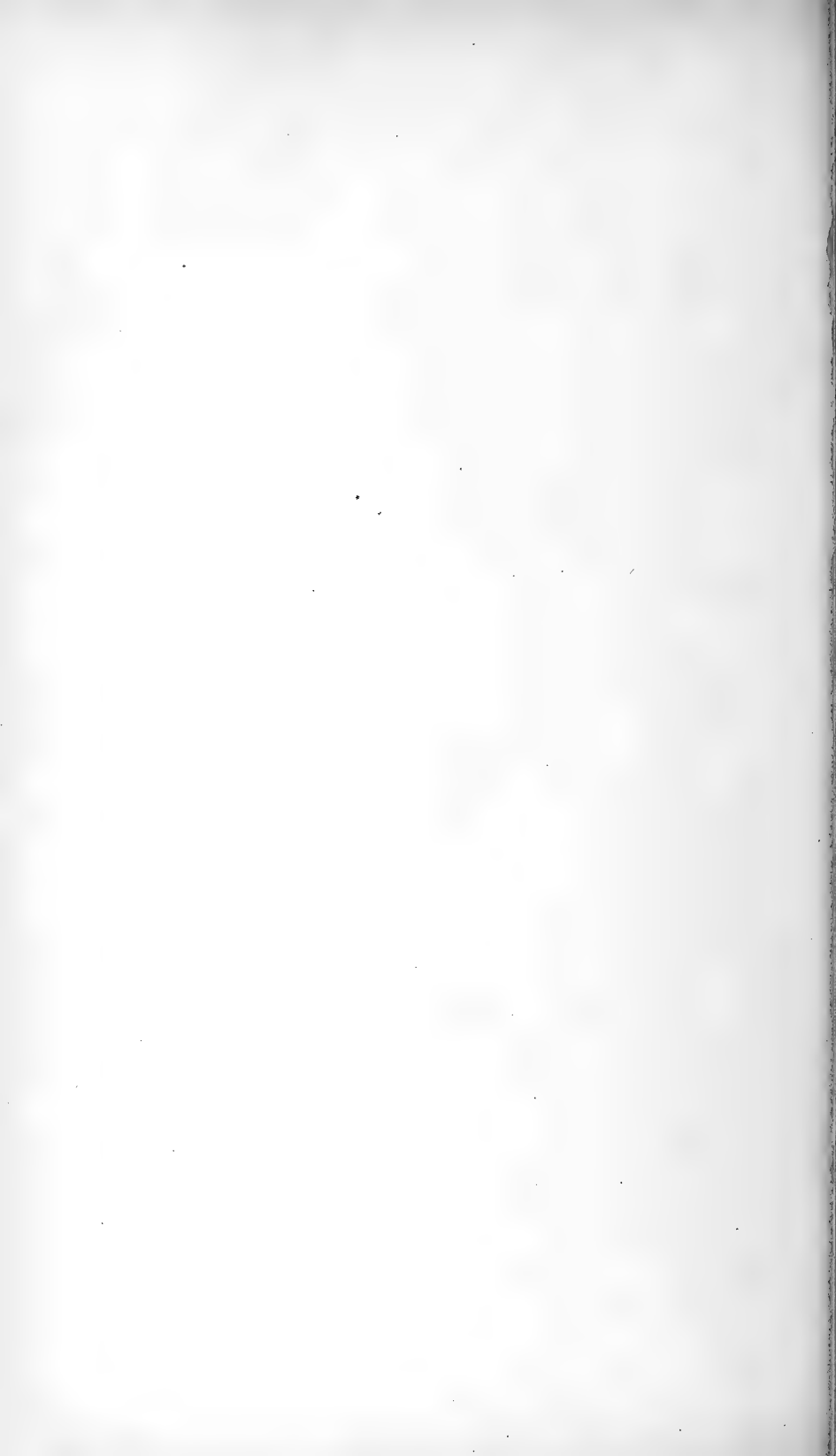


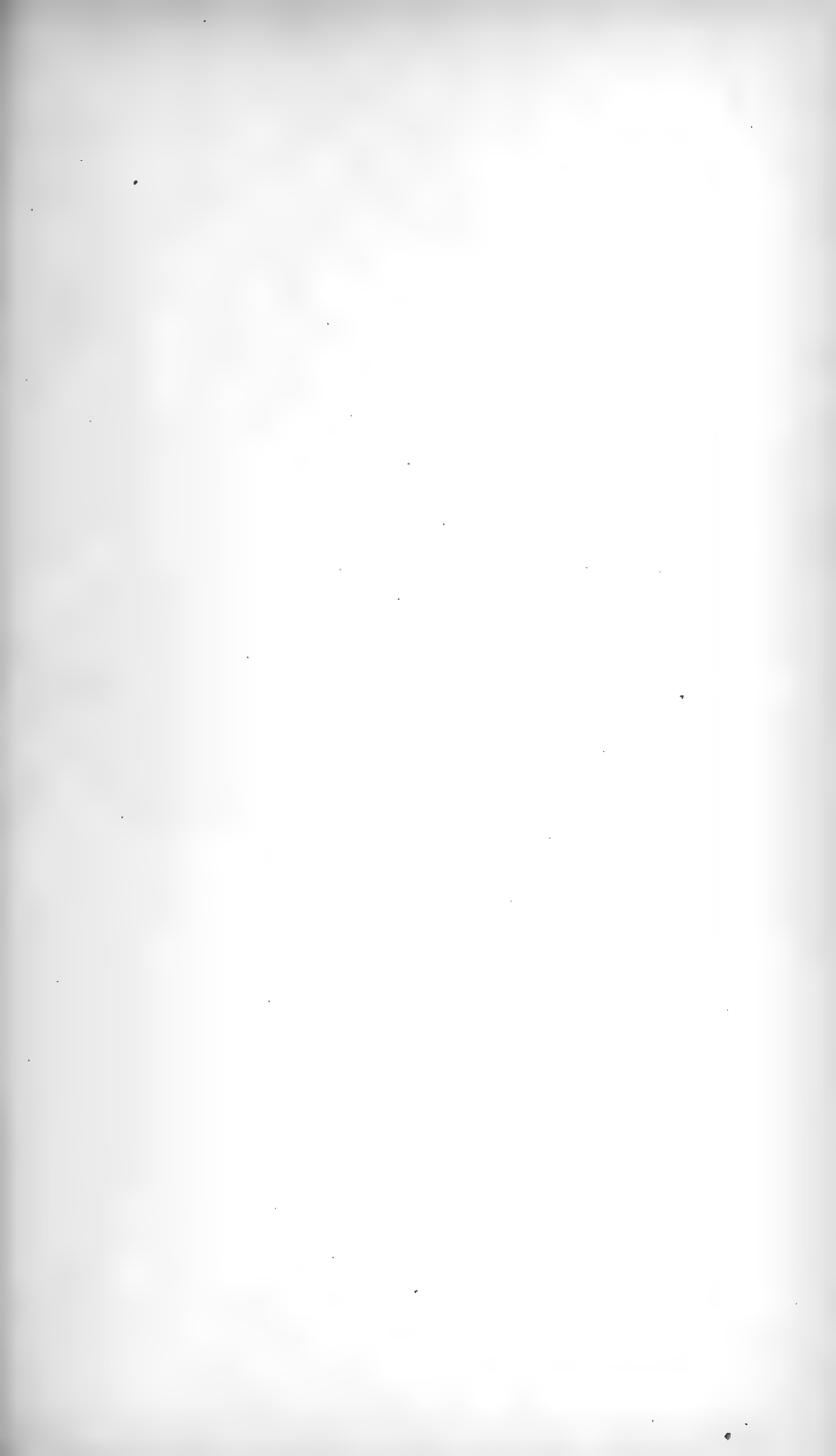
FIG 1-6 *HYGROPHORUS PUDORINUS* FR.
BLUSHING HYGROPHORUS

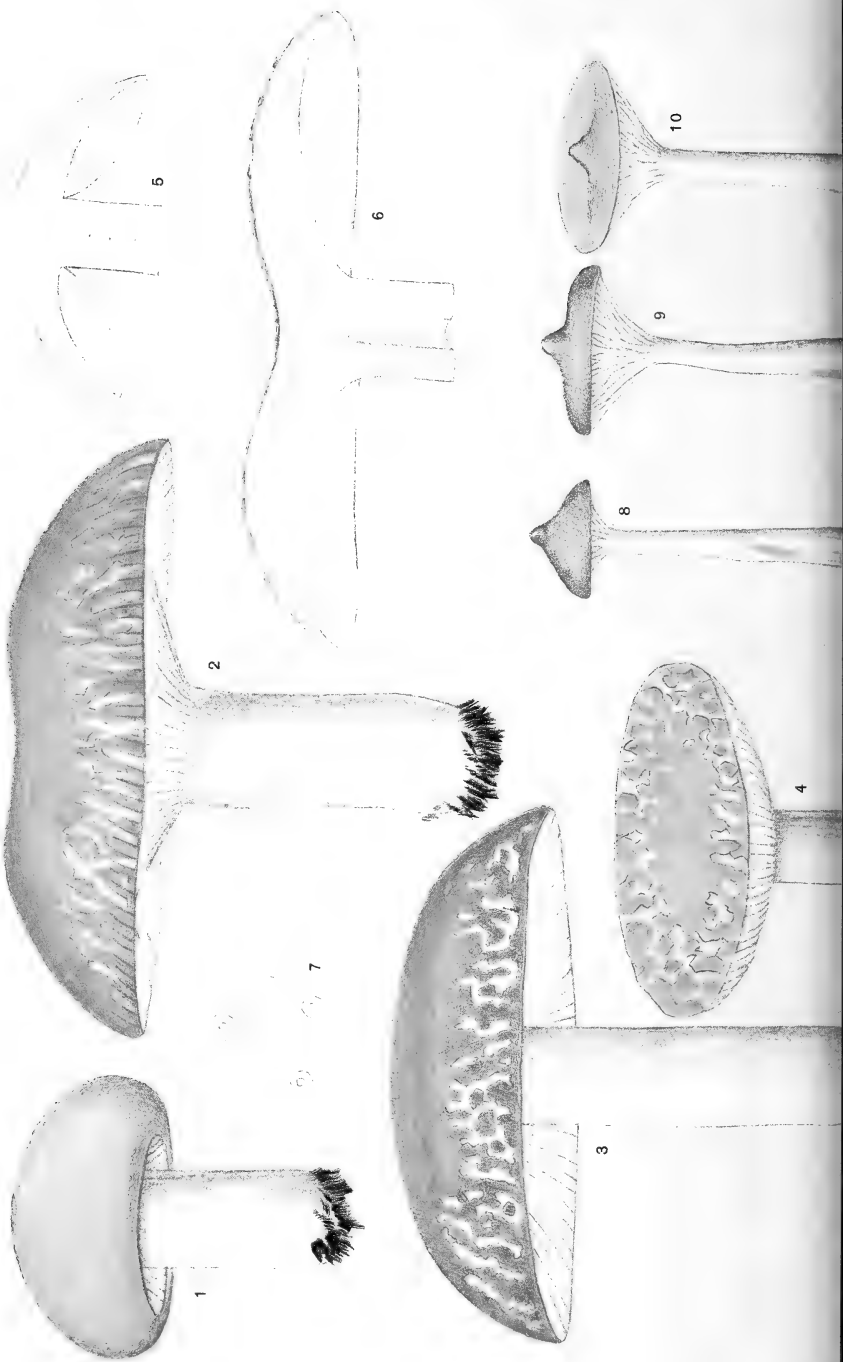
FIG. 7-11 *LACTARIUS LUTEOLUS* PK.
YELLOWISH LACTARIUS

FIG. 12-19 *LACTARIUS SUBDULCIS* FR.
SWEET LACTARIUS

FIG. 20-24 *LACTARIUS SUBDULCIS OCULATUS* PK.
EYE SPOT LACTARIUS







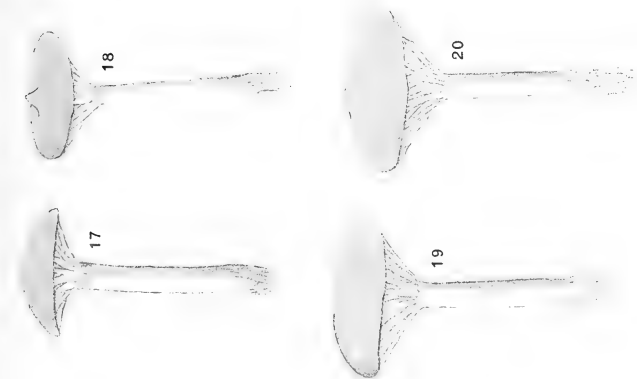


FIG. 1-7 *RUSSULA CRUSTOSA* PK.
CRUSTED RUSSULA

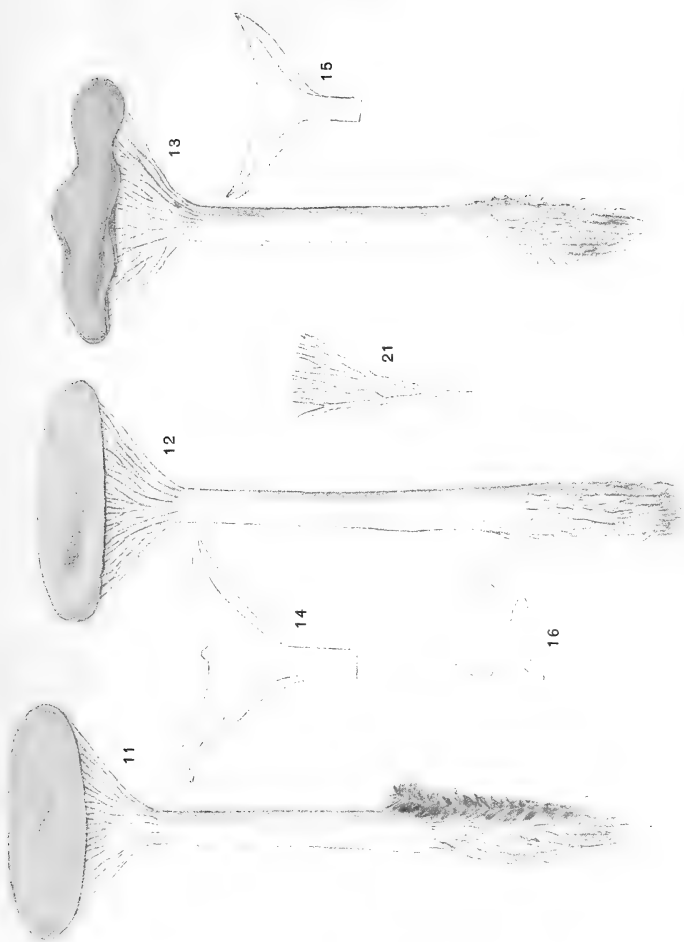


FIG. 8-21 *CANTHARELLUS DICHOTOMUS* PK.
FORKED CHANTARELLE





FIG. 1-7 *RUSSULA CRUSTOSA* PK.
CRUSTED RUSSULA

FIG. 8-21 *CANTHARELLUS DICHOTOMUS* PK.
FORKED CHANTARELLE



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 39 (P2) Clarke, J. M.; Simpson, G. B. & Loomis, F. B. Paleontologic Papers 1. 72p. il. 16pl. Oct. 1900. 15c.

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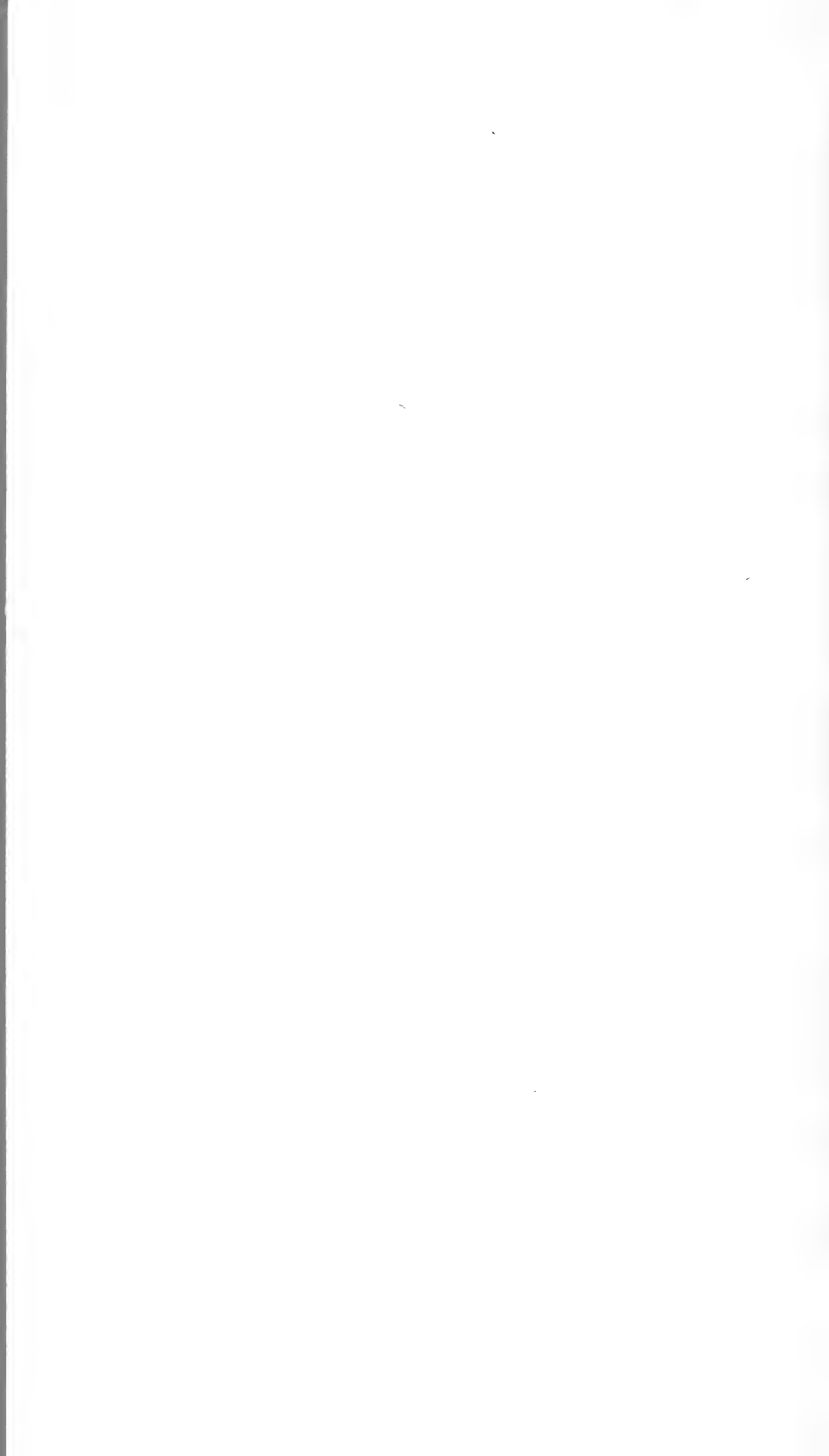
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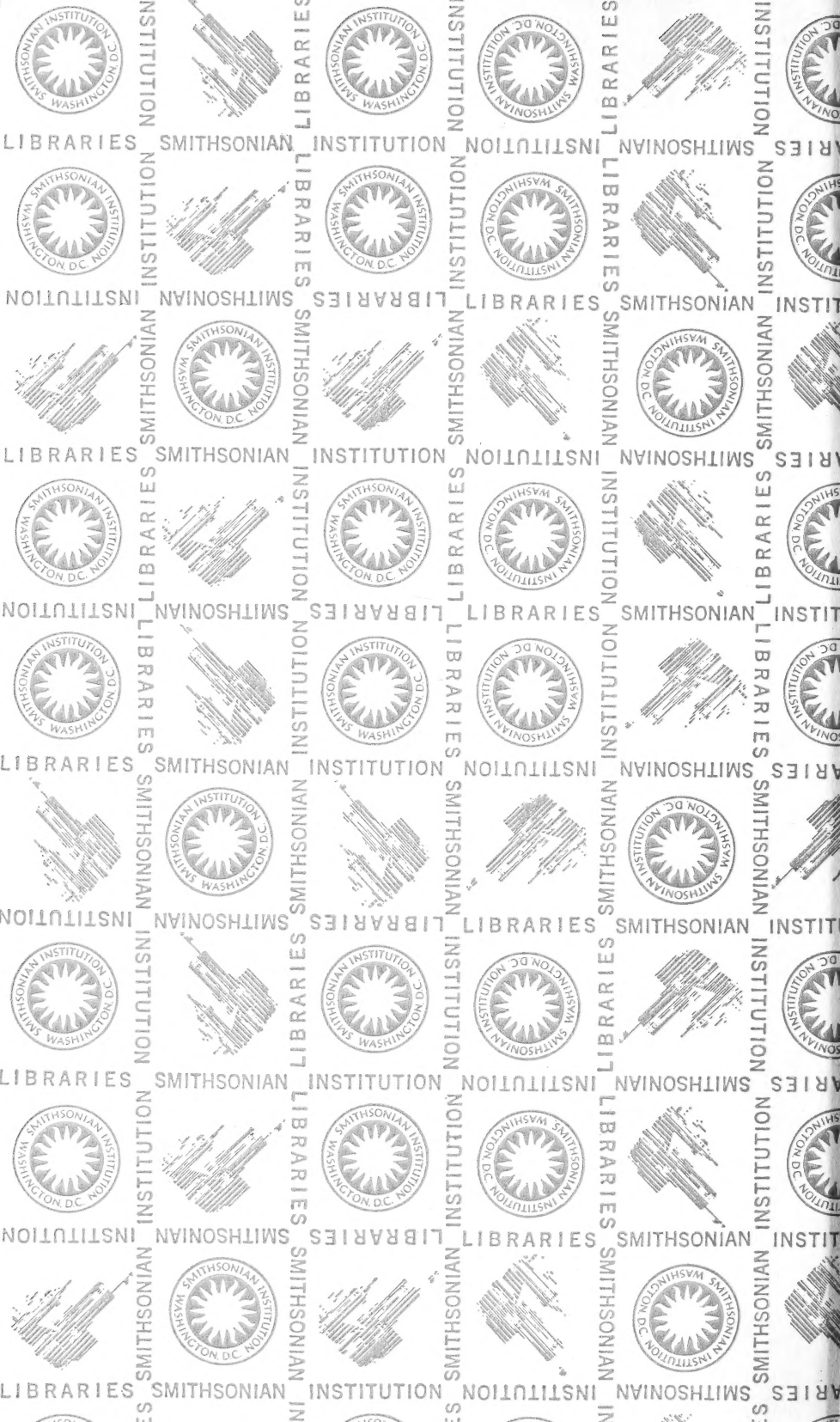
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